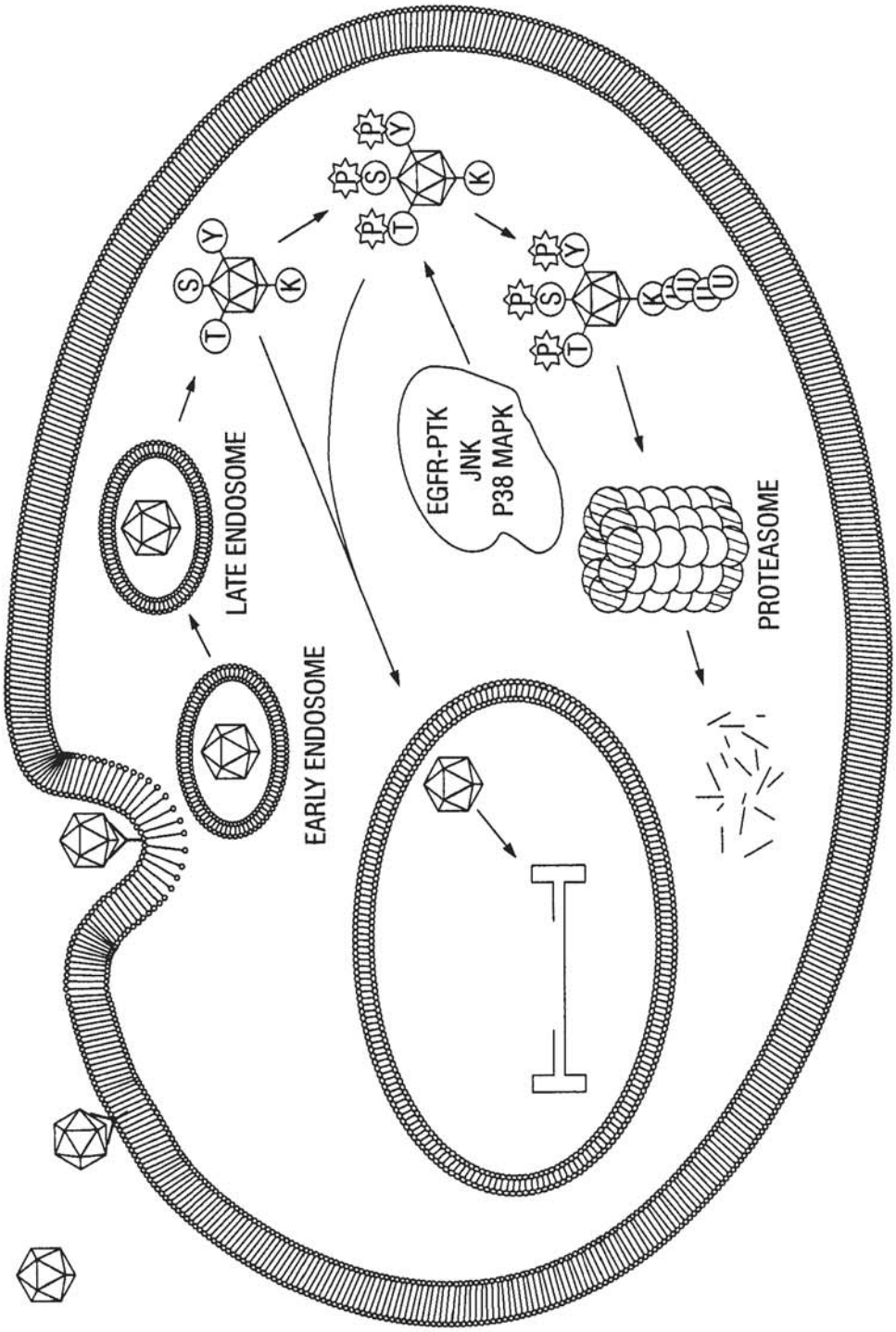

LATE ENDOSOME
EARLY ENDOSOME
EGFR-PTK
JNK
P38 MAPK
PROTEASOME

FIG. 1

```
CAPSID  1                                                                                                    SEQUENCE                                                                                                    100
AAV1   (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
AAV2   (1) MAADGYLPDWLEDTLSEGIRQWWKLKPGPPPPKPAERHKDDSRGLVLPGYKYLGPFNGLDKGEPVNEADAAALEHDKAYDRQLDSGDNPYLKYNHADAEF
AAV3   (1) MAADGYLPDWLEDNLSEGIREWWALKPGVPQPKANQQHQDNRRGLVLPGYKYLGPGNGLDKGEPVNEADAAALEHDKAYDQQLKAGDNPYLKYNHADAEF
AAV4   (1) -MTDGYLPDWLEDNLSEGVREWWALQPGAPKPKANQQHQDNARGLVLPGYKYLGPGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLKYNHADAEF
AAV5   (1) MSFVDHPPDWLEEVG-EGLREFLGLEAGPPKPKPNQQHQDQARGLVLPGYNYLGPGNGLDRGEPVNRADEVAREHDISYNEQLEAGDNPYLKYNHADAEF
AAV6   (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
AAV7   (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDNGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
AAV8   (1) MAADGYLPDWLEDNLSEGIREWWALKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLQAGDNPYLRYNHADAEF
AAV9   (1) MAADGYLPDWLEDNLSEGIREWWALKPGAPQPKANQQHQDNARGLVLPGYKYLGPGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLKYNHADAEF
AAV10  (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
           101                                                                                                                                                                                         200
AAV1  (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE-PDSSSGIGKTGQQPAKKRLNFGQTGDSESVPDPQPLGEPPATPAAVG
AAV2  (101) QERLKEDTSFGGNLGRAVFQAKKRVLEPLGLVEEPVKTAPGKKRPVEHSPVE-PDSSSGTGKAGQQPARKRLNFGQTGDADSVPDPQPLGQPPAAPSGLG
AAV3  (101) QERLQEDTSFGGNLGRAVFQAKKRILEPLGLVEEAAKTAPGKKGAVDQSPQE-PDSSSGVGKSGKQPARKRLNFGQTGDSESVPDPQPLGEPPAAPTSLG
AAV4  (100) QQRLQGDTSFGGNLGRAVFQAKKRVLEPLGLVEQAGETAPGKKRPLIESPQQ-PDSSTGIGKKGKQPAKKKLVFEDETGAGDGP---PEGSTSGAMSDDS
AAV5  (100) QEKLADDTSFGGNLGKAVFQAKKRVLEPFGLVEEGAKTAPTGKRIDDHFPKR---------KKARTEEDSKPSTSSDAEAGPSGS-QQLQIPAQPASSLG
AAV6  (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPFGLVEEGAKTAPGKKRPVEQSPQE-PDSSSGIGKTGQQPAKKRLNFGQTGDSESVPDPQPLGEPPATPAAVG
AAV7  (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPAKKRPVEPSPQRSPDSSTGIGKKGQQPARKRLNFGQTGDSESVPDPQPLGEPPAAPSSVG
AAV8  (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRSPDSSTGIGKKGQQPARKRLNFGQTGDSESVPDPQPLGEPPAAPSGVG
AAV9  (101) QERLKEDTSFGGNLGRAVFQAKKRLLEPLGLVEEAAKTAPGKKRPVEQSPQE-PDSSAGIGKSGAQPAKKRLNFGQTGDTESVPDPQPIGEPPAAPSGVG
AAV10 (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRSPDSSTGIGKKGQQPAKKRLNFGQTGDSESVPDPQPIGEPPAGPSGLG
           201                                                                                                                                                                                         300
AAV1  (200) PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTSTRTWALPTYNNHLYKQISSAST-GASNDNHYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV2  (200) TNTMATGSGAPMADNNEGADGVGNSSGNWHCDSTWMGDRVITTSTRTWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV3  (200) SNTMASGGGAPMADNNEGADGVGNSSGNWHCDSQWLGDRVITTSTRTWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV4  (196) EMRAAAGGAAVEGG--QGADGVGNASGDWHCDSTWSEGHVTTTSTRTWVLPTYNNHLYKRLGESLQ-----SNTYNGFSTPWGYFDFNRFHCHFSPRDWQ
AAV5  (190) ADTMSAGGGGPLGDNNQGADGVGNASGDWHCDSTWMGDRVVTKSTRTWVLPSYNNHQYREIKSGS-VDGSNANAYFGYSTPWGYFDFNRFHSHWSPRDWQ
AAV6  (200) PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTSTRTWALPTYNNHLYKQISSAST-GASNDNHYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV7  (201) SGTVAAGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTSTRTWALPTYNNHLYKQISSETAG-STNDNTYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV8  (201) PNTMAAGGGAPMADNNEGADGVGSSSGNWHCDSTWLGDRVITTSTRTWALPTYNNHLYKQISNGTSGGATNDNTYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV9  (200) SLTMASGGGAPVADNNEGADGVGSSSGNWHCDSQWLGDRVITTSTRTWALPTYNNHLYKQISNSTSGGSSNDNAYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV10 (201) SGTMAAGGGAPMADNNEGADGVGSSSGNWHCDSTWLGDRVITTSTRTWALPTYNNHLYKQISNGTSGGSTNDNTYFGYSTPWGYFDFNRFHCHFSPRDWQ
```

FIG. 2A-1

```
          301                                                                                                  400
AAV1  (299) RLINNNWGFRPKRLNFKLFNIQVKEVTTNDGVTTIANNLTSTVQVFSDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
AAV2  (298) RLINNNWGFRPKRLNFKLFNIQVKEVTQNDGTTTIANNLTSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMVPQYGYLTLNNGSQA---VGRSSFYC
AAV3  (298) RLINNNWGFRPKKLSFKLFNIQVRGVTQNDGTTTIANNLTSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMVPQYGYLTLNNGSQA---VGRSSFYC
AAV4  (289) RLINNNWGMRPKAMRVKIFNIQVKEVTTSNGETTVANNLTSTVQIFADSSYELPYVMDAGQEGSLPPFPNDVFMVPQYGYCGLVTGNTSQQQTDRNAFYC
AAV5  (289) RLINNYWGFRPRSLRVKIFNIQVKEVTVQDSTTTIANNLTSTVQVFTDDDYQLPYVVGNGTEGCLPAFPPQVFTLPQYGYATLNRDNTEN-PTERSSFFC
AAV6  (299) RLINNNWGFRPKRLNFKLFNIQVKEVTTNDGVTTIANNLTSTVQVFSDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
AAV7  (300) RLINNNWGFRPKKLRFKLFNIQVKEVTTNDGVTTIANNLTSTIQVFSDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQS---VGRSSFYC
AAV8  (301) RLINNNWGFRPKRLSFKLFNIQVKEVTQNEGTKTIANNLTSTIQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
AAV9  (300) RLINNNWGFRPKRLNFKLFNIQVKEVTDNNGVKTIANNLTSTVQVFTDSDYQLPYVLGSAHEGCLPPFPADVFMIPQYGYLTLNDGSQA---VGRSSFYC
AAV10 (301) RLINNNWGFRPKRLNFKLFNIQVKEVTQNEGTKTIANNLTSTIQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
          401                                                                                                  500
AAV1  (396) LEYFPSQMLRTGNNFTFSYTFEEVPFHSSYAHSQSLDRLMNPLIDQYLYYLNRTQ-NQSGSAQNKDLLFSRGSPAGMSVQPKNWLPGPCYRQQRVSKTKT
AAV2  (395) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTN-TPSGTTTQSRLQFSQAGASDIRDQSRNWLPGPCYRQQRVSKTSA
AAV3  (395) LEYFPSQMLRTGNNFQFSYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLNRTQGTTSGTTNQSRLLFSQAGPQSMSLQARNWLPGPCYRQQRLSKTAN
AAV4  (389) LEYFPSQMLRTGNNFEITYSFEKVPFHSMYAHSQSLDRLMNPLIDQYLWGLQSTTTGTTLNAGTATTNFTKLRPTNFSNFKKNWLPGPSIKQQGFSKTAN
AAV5  (388) LEYFPSKMLRTGNNFEFTYNFEEVPFHSSFAPSQNLFKLANPLVDQYLYRFVSTN-------NTGGVQFNKNLAGRYANTYKNWFPGPMGRTQGWNLGSG
AAV6  (396) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLNRTQ-NQSGSAQNKDLLFSRGSPAGMSVQPKNWLPGPCYRQQRVSKTKT
AAV7  (397) LEYFPSQMLRTGNNFEFSYSFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLARTQSNPGGTAGNRELQFYQGGPSTMAEQAKNWLPGPCFRQQRVSKTLD
AAV8  (398) LEYFPSQMLRTGNNFQFTYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTQTT-GGTANTQTLGFSQGGPNTMANQAKNWLPGPCYRQQRVSTTTG
AAV9  (397) LEYFPSQMLRTGNNFQFSYEFENVPFHSSYAHSQSLDRLMNPLIDQYLYYLSKTING--SGQNQQTLKFSVAGPSNMAVQGRNYIPGPSYRQQRVSTTVT
AAV10 (398) LEYFPSQMLRTGNNFEFSYQFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTQST-GGTAGTQQLLFSQAGPNNMSAQAKNWLPGPCYRQQRVSTTLS
          501                                                                                                  600
AAV1  (495) DN-----NNSNFTWTGASKYNLNGRESIINPGTAMASHKDDEDKFFPMSGVMIFGKE---SAGASNTALDNVMITDEEEIKATNPVATERFGTVAVNFQS
AAV2  (494) DN-----NNSEYSWTGATKYHLNGRDSLVNPGPAMASHKDDEEKFFPQSGVLIFGKQ---GSEKTNVDIEKVMITDEEEIRTTNPVATEQYGSVSTNLQR
AAV3  (495) DN-----NNSNFPWTAASKYHLNGRDSLVNPGPAMASHKDDEEKFFPMHGNLIFGKE---GTTASNAELDNVMITDEEEIRTTNPVATEQYGTVANNLQS
AAV4  (489) QNYKIPATGSDSLIKYETHSTLDGRWSALTPGPPMATAGPADSKFS-NSQLIFAGPK---QNGNTATVPGTLIFTSEEELAATNATDTDMWGNLPGGDQS
AAV5  (481) VN-----RASVSAFATTNRMELEGASYQVPPQPNGMTNNLQGSNTYALENTMIFNSQPANPGTTATYLEGNMLITSESETQPVNRVAYNVGGQMATNNQS
AAV6  (495) DN-----NNSNFTWTGASKYNLNGRESIINPGTAMASHKDDKDKFFPMSGVMIFGKE---SAGASNTALDNVMITDEEEIKATNPVATERFGTVAVNLQS
AAV7  (497) QN-----NNSNFAWTGATKYHLNGRNSLVNPGVAMATHKDDEDRFFPSSGVLIFGKT----GATNKTTLENVLMTNEEEIRPTNPVATEEYGIVSSNLQA
AAV8  (497) QN-----NNSNFAWTAGTKYHLNGRNSLANPGIAMATHKDDEERFFPSNGILIFGKQ---NAARDNADYSDVMLTSEEEIKTTNPVATEEYGIVADNLQQ
AAV9  (495) QN-----NNSEFAWPGASSWALNGRNSLMNPGPAMASHKEGEDRFFPLSGSLIFGKQ---GTGRDNVDADKVMITNEEEIKTTNPVATESYGQVATNHQS
AAV10 (497) QN-----NNSNFAWTGATKYHLNGRDSLVNPGVAMATHKDDEERFFPSSGVLMFGKQ---GAGKDNVDYSSVMLTSEEEIKTTNPVATEQYGVVADNLQQ
```

FIG. 2A-2


601
700
AAV1 (587) SSTDPATGDVHAMGALPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKNPPPQILIKNTPVPANPPAEFSATKFASFITQYSTGQVSVEIEWE
AAV2 (586) GNRQAATADVNTQGVLPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKHPPPQILIKNTPVPANPSTTFSAAKFASFITQYSTGQVSVEIEWE
AAV3 (587) SNTAPTTGTVNHQGALPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKHPPPQIMIKNTPVPANPPTTFSPAKFASFITQYSTGQVSVEIEWE
AAV4 (585) NSNLPTVDRLTALGAVPGMVWQNRDIYYQGPIWAKIPHTDGHFHPSPLIGGFGLKHPPPQIFIKNTPVPANPATTFSSTPVNSFITQYSTGQVSVQIDWE
AAV5 (576) STTAPATGTYNLQEIVPGSVWMERDVYLQGPIWAKIPETGAHFHPSPAMGGFGLKHPPPMMLIKNTPVPGN-ITSFSDVPVSSFITQYSTGQVTVEMEWE
AAV6 (587) SSTDPATGDVHVMGALPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKHPPPQILIKNTPVPANPPAEFSATKFASFITQYSTGQVSVEIEWE
AAV7 (588) ANTAAQTQVVNNQGALPGMVWQNRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGLKHPPPQILIKNTPVPANPPEVFTPAKFASFITQYSTGQVSVEIEWE
AAV8 (589) QNTAPQIGTVNSQGALPGMVWQNRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGLKHPPPQILIKNTPVPADPPTTFNQSKLNSFITQYSTGQVSVEIEWE
AAV9 (587) AQAQAQTGWVQNQGILPGMVWQDRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGMKHPPPQILIKNTPVPADPPTAFNKDKLNSFITQYSTGQVSVEIEWE
AAV10 (589) QNAAPIVGAVNSQGALPGMVWQNRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGLKHPPPQILIKNTPVPADPPTTFSQAKLASFITQYSTGQVSVEIEWE
701
751
AAV1 (687) LQKENSKRWNPEVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL- SEQ ID NO:1
AAV2 (686) LQKENSKRWNPEIQYTSNYNKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL- SEQ ID NO:2
AAV3 (687) LQKENSKRWNPEIQYTSNYNKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL- SEQ ID NO:3
AAV4 (685) IQKERSKRWNPEVQFTSNYGQQNSLLWAPDAAGKYTEPRAIGTRYLTHHL- SEQ ID NO:4
AAV5 (675) LKKENSKRWNPEIQYTNNYNDPQFVDFAPDSTGEYRTTRPIGTRYLTRPL- SEQ ID NO:5
AAV6 (687) LQKENSKRWNPEVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL- SEQ ID NO:6
AAV7 (688) LQKENSKRWNPEIQYTSNFEKQTGVDFAVDSQGVYSEPRPIGTRYLTRNL- SEQ ID NO:7
AAV8 (689) LQKENSKRWNPEIQYTSNYYKSTSVDFAVNTEGVYSEPRPIGTRYLTRNL- SEQ ID NO:8
AAV9 (687) LQKENSKRWNPEIQYTSNYYKSNNVEFAVNTEGVYSEPRPIGTRYLTRNL- SEQ ID NO:9
AAV10 (689) LQKENSKRWNPEIQYTSNYYKSTNVDFAVNTDGTYSEPRPIGTRYLTRNL- SEQ ID NO:10

FIG. 2A-3

AAV1	AAV2	AAV3	AAV4	AAV5	AAV6	AAV7	AAV8	AAV9	AAV10	AAV11	AAV12
NA	K24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K26	K26	K26	NA	NA	K26	K26	K26	K26	K26	K26	K26
K31	NA	NA	K30	K30	K31	K31	K31	NA	K31	K31	NA
K33	K33	K33	K32	K32	K33	K33	K33	K33	K33	K33	K33
K38	NA	NA	NA	NA	K38	K38	K38	NA	K38	K38	NA
NA	K39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
K51	K51	K51	K50	NA	K51	K51	K51	K51	K51	K51	K51
K61	K61	K61	K60	NA	K61	K61	K61	K61	K61	K61	K61
K77	K77	K77	K76	NA	K77	K77	K77	K77	K77	K77	K77
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	K81
K84	NA	K84	K83	NA	K84	K84	NA	K84	K84	K84	NA
NA	K92	K92	K91	K91	NA	NA	NA	K92	NA	NA	K92
NA	NA	NA	NA	K102	NA	NA	NA	NA	NA	NA	NA
NA	K105	NA	NA	NA	NA	NA	NA	K105	NA	NA	NA
NA	NA	NA	NA	K115	NA	NA	NA	NA	NA	NA	NA
K122	K122	K122	K121	K121	K122	K122	K122	K122	K122	K122	K122
K123	K123	K123	K122	K122	K123	K123	K123	K123	K123	K123	K123
K137	K137	K137	NA	K136	K137	K137	K137	K137	K137	K137	K137
K142	K142	K142	K141	NA	K142	K142	K142	K142	K142	K142	K142
K143	K143	K143	K142	K142	K143	K143	K143	K143	K143	K143	K142
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	K148
NA	NA	NA	NA	K150	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	K152	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	K153	NA	NA	NA	NA	NA	NA	K160
K161	K161	K161	K160	NA	K161	K162	K162	K161	K162	K160	K164
NA	NA	NA	K161	NA	NA	K163	K163	NA	K163	K161	K165
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	K166

FIG. 2B-1

NA	NA	K164	K163	NA	NA	NA	NA	NA	NA	K163	NA
NA	NA	NA	NA	K161	NA	NA	NA	NA	NA	NA	K168
K168	NA	NA	K167	NA	K168	NA	NA	K168	K169	NA	NA
K169	K169	K169	K168	NA	K169	K170	K170	K169	K170	K168	NA
NA	NA	NA	K169	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	K232-I	NA	NA	NA	NA	NA	NA	NA
K258-S	**K258-S**	**K258-S**	**K525-S**	NA	**K258-S**	**K259-S**	**K259-S**	**K258-S**	**K259-S**	NA	NA
NA	NA	NA	NA	**K251-S**	NA	NA	NA	NA	NA	NA	NA
K310-I	K309-I	K309-I	K300-I	NA	K310-I	K311-I	K312-I	K311-I	K312-I	K300-I	K309-I
NA	NA	K310-I	NA	NA	NA	K312-I	NA	NA	NA	NA	NA
K315-I	K314-I	K314-I	K305-I	K305-I	K315-I	K316-I	K317-I	K316-I	K317-I	K305-I	K314-I
K322-I	K321-I	K321-I	K312-I	K312-I	K322-I	K323-I	K324-I	K323-I	K324-I	K312-I	K321-I
NA	NA	NA	NA	NA	NA	NA	**K333-S**	**K332-S**	**K333-S**	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	K384-I
NA	NA	NA	NA	K394-I	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	K411-I	NA	NA	NA	NA	NA	NA	K410-I	K419-I
NA	NA	NA	NA	K425-I	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	**K449-S**	NA	NA	NA
K459-I	NA	NA	NA	NA	K459-I	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	**K462-S**	NA	NA	NA
NA	NA	NA	K459-I	K451-I	NA	NA	NA	NA	NA	K458-I	K467-I
NA	NA	NA	K469-I	NA	NA	NA	NA	NA	NA	NA	NA
K476-I	NA	NA	K470-I	K462-I	K476-I	K478-I	K478-I	NA	K478-I	K469-I	K478-I
NA	NA	NA	**K479-S**	NA	NA	NA	NA	NA	NA	K478-I	K487-I

FIG. 2B-2

NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	K490-I
K491-S	**K490-S**	**K491-S**	**K485-S**	NA	**K491-S**	**K493-S**	NA	NA	NA	**K484-S**	**K490-S**
K493-S	NA	NA	NA	NA	**K493-S**	NA	NA	NA	NA	NA	NA
NA	NA	NA	**K492-S**	NA	NA	NA	NA	NA	NA	**K491-S**	**K493-S**
NA	NA	NA	**K503-S**	NA	NA	NA	NA	NA	NA	**K502-S**	**K511-S**
K508-S	**K507-S**	**K508-S**	NA	NA	**K508-S**	**K510-S**	**K510-S**	NA	**K510-S**	NA	NA
K528-S	**K527-S**	**K528-S**	NA	NA	**K528-S**	**K530-S**	**K530-S**	**K528-S**	**K530-S**	NA	NA
NA	NA	NA	NA	NA	**K531-S**	NA	NA	NA	NA	NA	NA
K533-S	**K532-S**	**K533-S**	NA	NA	**K533-S**	NA	NA	NA	NA	NA	NA
NA	NA	NA	**K532-S**	NA	NA	NA	NA	NA	NA	NA	NA
K545-S	**K544-S**	**K545-S**	NA	NA	**K545-S**	**K547-S**	**K547-S**	**K545-S**	**K547-S**	NA	NA
NA	NA	NA	**K544-S**	NA	NA	NA	NA	NA	NA	NA	NA
NA	**K549-S**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	**K553-S**	NA	NA	NA	NA	NA
NA	**K556-S**	NA	NA	NA	NA	NA	NA	**K557-S**	NA	NA	NA
K567-S	NA	NA	NA	NA	**K567-S**	NA	**K569-S**	**K567-S**	**K569-S**	NA	NA
K621-I	K620-I	K621-I	K619-I	K610-I	K621-I	K622-I	K623-I	K621-I	K623-I	K618-I	K627-I
K641-I	K640-I	K641-I	K639-I	K630-I	K641-I	K642-I	K643-I	K641-I	K643-I	K638-I	K647-I
K650-I	K649-I	K650-I	K648-I	K639-I	K650-I	K651-I	K652-I	K650-I	K652-I	K647-I	K656-I
NA	NA	NA	NA	NA	NA	NA	NA	K664-I	NA	NA	NA
K666-S	**K665-S**	**K666-S**	NA	NA	**K666-S**	**K667-S**	**K668-S**	**K666-S**	**K668-S**	NA	NA
NA	NA	NA	NA	K676-I	NA	NA	NA	NA	NA	NA	NA
K689-I	K688-I	K689-I	K687-I	K677-I	K689-I	K690-I	K691-I	K689-I	K691-I	K686-I	K695-I
K693-I	K692-I	K693-I	K691-I	K681-I	K693-I	K694-I	K695-I	K693-I	K695-I	K690-I	K699-I
K707-S	**K706-S**	**K707-S**	NA	NA	**K707-S**	**K708-S**	**K709-S**	**K707-S**	**K709-S**	NA	NA
NA	NA	NA	K718-I	NA	NA	NA	NA	NA	NA	K717-I	NA

FIG. 2B-3

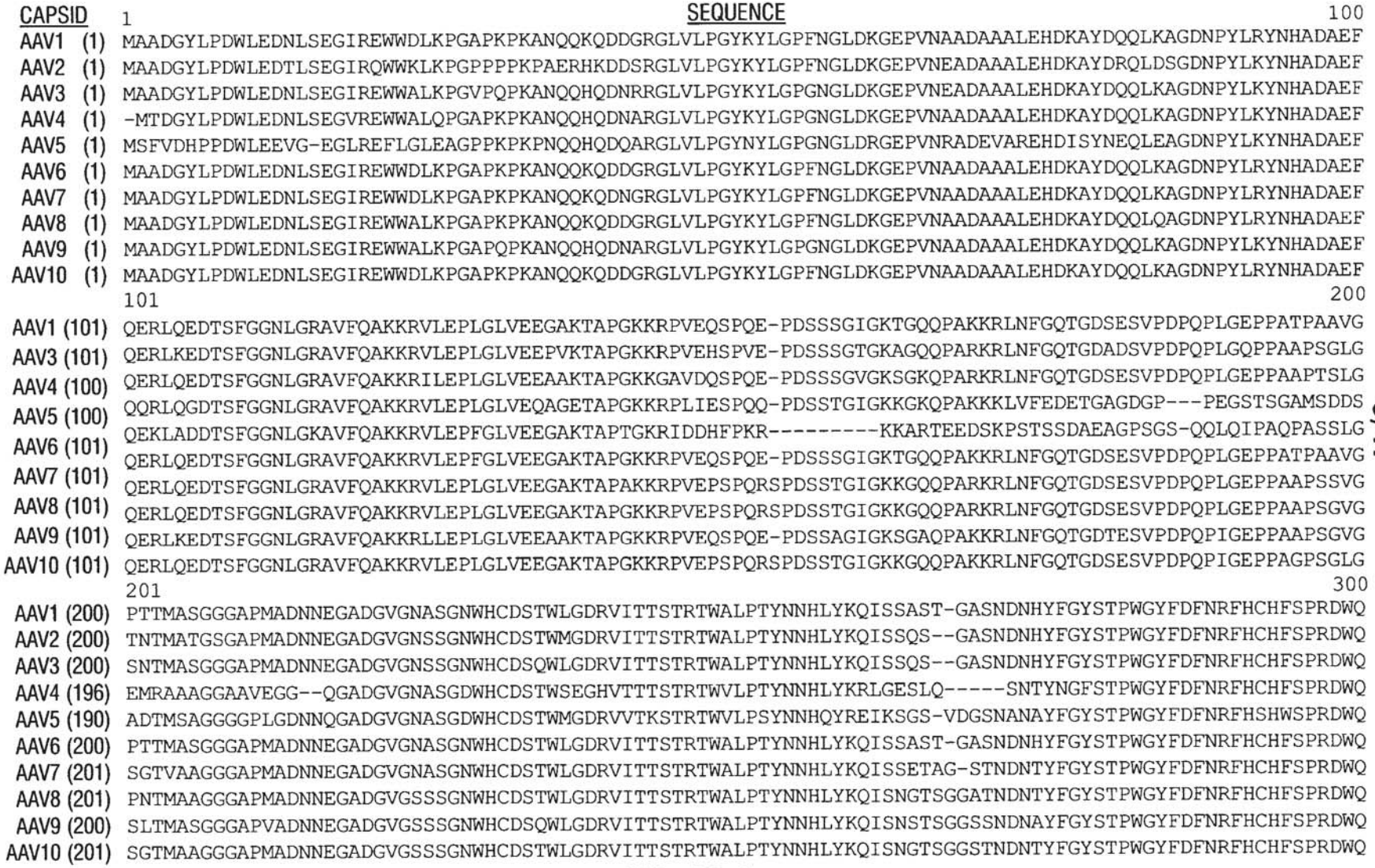

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AAV3 (1) MAADGYLPDWLEDNLSEGIREWWALKPGVPQPKANQQHQDNRRGLVLPGYKYLGPGNGLDKGEPVNEADAAALEHDKAYDQQLKAGDNPYLKYNHADAEF
AAV4 (1) -MTDGYLPDWLEDNLSEGVREWWALQPGAPKPKANQQHQDNARGLVLPGYKYLGPGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLKYNHADAEF
AAV5 (1) MSFVDHPPDWLEEVG-EGLREFLGLEAGPPKPKPNQQHQDQARGLVLPGYNYLGPGNGLDRGEPVNRADEVAREHDISYNEQLEAGDNPYLKYNHADAEF
AAV6 (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
AAV7 (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDNGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
AAV8 (1) MAADGYLPDWLEDNLSEGIREWWALKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLQAGDNPYLRYNHADAEF
AAV9 (1) MAADGYLPDWLEDNLSEGIREWWALKPGAPQPKANQQHQDNARGLVLPGYKYLGPGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLKYNHADAEF
AAV10 (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
101
200
AAV1 (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE-PDSSSGIGKTGQQPAKKRLNFGQTGDSESVPDPQPLGEPPATPAAVG
AAV3 (101) QERLKEDTSFGGNLGRAVFQAKKRVLEPLGLVEEPVKTAPGKKRPVEHSPVE-PDSSSGTGKAGQQPARKRLNFGQTGDADSVPDPQPLGQPPAAPSGLG
AAV4 (100) QERLQEDTSFGGNLGRAVFQAKKRILEPLGLVEEAAKTAPGKKGAVDQSPQE-PDSSSGVGKSGKQPARKRLNFGQTGDSESVPDPQPLGEPPAAPTSLG
AAV5 (100) QQRLQGDTSFGGNLGRAVFQAKKRVLEPLGLVEQAGETAPGKKRPLIESPQQ-PDSSTGIGKKGKQPAKKKLVFEDETGAGDGP---PEGSTSGAMSDDS
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AAV7 (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPFGLVEEGAKTAPGKKRPVEQSPQE-PDSSSGIGKTGQQPAKKRLNFGQTGDSESVPDPQPLGEPPATPAAVG
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AAV9 (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRSPDSSTGIGKKGQQPARKRLNFGQTGDSESVPDPQPLGEPPAAPSGVG
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201
300
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AAV2 (200) TNTMATGSGAPMADNNEGADGVGNSSGNWHCDSTWMGDRVITTSTRTWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV3 (200) SNTMASGGGAPMADNNEGADGVGNSSGNWHCDSQWLGDRVITTSTRTWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDFNRFHCHFSPRDWQ
AAV4 (196) EMRAAAGGAAVEGG--QGADGVGNASGDWHCDSTWSEGHVTTTSTRTWVLPTYNNHLYKRLGESLQ-----SNTYNGFSTPWGYFDFNRFHCHFSPRDWQ
AAV5 (190) ADTMSAGGGGPLGDNNQGADGVGNASGDWHCDSTWMGDRVVTKSTRTWVLPSYNNHQYREIKSGS-VDGSNANAYFGYSTPWGYFDFNRFHSHWSPRDWQ
AAV6 (200) PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTSTRTWALPTYNNHLYKQISSAST-GASNDNHYFGYSTPWGYFDFNRFHCHFSPRDWQ
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FIG. 2C-1

```
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AAV3 (298) RLINNNWGFRPKKLSFKLFNIQVRGVTQNDGTTTIANNLTSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMVPQYGYLTLNNGSQA---VGRSSFYC
AAV4 (289) RLINNNWGMRPKAMRVKIFNIQVKEVTTSNGETTVANNLTSTVQIFADSSYELPYVMDAGQEGSLPPFPNDVFMVPQYGYCGLVTGNTSQQQTDRNAFYC
AAV5 (289) RLINNYWGFRPRSLRVKIFNIQVKEVTVQDSTTTIANNLTSTVQVFTDDDYQLPYVVGNGTEGCLPAFPPQVFTLPQYGYATLNRDNTEN-PTERSSFFC
AAV6 (299) RLINNNWGFRPKRLNFKLFNIQVKEVTTNDGVTTIANNLTSTVQVFSDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
AAV7 (300) RLINNNWGFRPKKLRFKLFNIQVKEVTTNDGVTTIANNLTSTIQVFSDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQS---VGRSSFYC
AAV8 (301) RLINNNWGFRPKRLSFKLFNIQVKEVTQNEGTKTIANNLTSTIQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
AAV9 (300) RLINNNWGFRPKRLNFKLFNIQVKEVTDNNGVKTIANNLTSTVQVFTDSDYQLPYVLGSAHEGCLPPFPADVFMIPQYGYLTLNDGSQA---VGRSSFYC
AAV10 (301) RLINNNWGFRPKRLNFKLFNIQVKEVTQNEGTKTIANNLTSTIQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
          401                                                                                                 500
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AAV2 (395) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTN-TPSGTTTQSRLQFSQAGASDIRDQSRNWLPGPCYRQQRVSKTSA
AAV3 (395) LEYFPSQMLRTGNNFQFSYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLNRTQGTTSGTTNQSRLLFSQAGPQSMSLQARNWLPGPCYRQQRLSKTAN
AAV4 (389) LEYFPSQMLRTGNNFEITYSFEKVPFHSMYAHSQSLDRLMNPLIDQYLWGLQSTTTGTTLNAGTATTNFTKLRPTNFSNFKKNWLPGPSIKQQGFSKTAN
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AAV7 (397) LEYFPSQMLRTGNNFEFSYSFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLARTQSNPGGTAGNRELQFYQGGPSTMAEQAKNWLPGPCFRQQRVSKTLD
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AAV10 (398) LEYFPSQMLRTGNNFEFSYQFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTQST-GGTAGTQQLLFSQAGPNNMSAQAKNWLPGPCYRQQRVSTTLS
          501                                                                                                 600
AAV1 (495) DN-----NNSNFTWTGASKYNLNGRESIINPGTAMASHKDDEDKFFPMSGVMIFGKE---SAGASNTALDNVMITDEEEIKATNPVATERFGTVAVNFQS
AAV2 (494) DN-----NNSEYSWTGATKYHLNGRDSLVNPGPAMASHKDDEEKFFPQSGVLIFGKQ---GSEKTNVDIEKVMITDEEEIRTTNPVATEQYGSVSTNLQR
AAV3 (495) DN-----NNSNFPWTAASKYHLNGRDSLVNPGPAMASHKDDEEKFFPMHGNLIFGKE---GTTASNAELDNVMITDEEEIRTTNPVATEQYGTVANNLQS
AAV4 (489) QNYKIPATGSDSLIKYETHSTLDGRWSALTPGPPMATAGPADSKFS-NSQLIFAGPK---QNGNTATVPGTLIFTSEEELAATNATDTDMWGNLPGGDQS
AAV5 (481) VN-----RASVSAFATTNRMELEGASYQVPPQPNGMTNNLQGSNTYALENTMIFNSQPANPGTTATYLEGNMLITSESETQPVNRVAYNVGGQMATNNQS
AAV6 (495) DN-----NNSNFTWTGASKYNLNGRESIINPGTAMASHKDDKDKFFPMSGVMIFGKE---SAGASNTALDNVMITDEEEIKATNPVATERFGTVAVNLQS
AAV7 (497) QN-----NNSNFAWTGATKYHLNGRNSLVNPGVAMATHKDDEDRFFPSSGVLIFGKT----GATNKTTLENVLMTNEEEIRPTNPVATEEYGIVSSNLQA
AAV9 (495) QN-----NNSNFAWTAGTKYHLNGRNSLANPGIAMATHKDDEERFFPSNGILIFGKQ---NAARDNADYSDVMLTSEEEIKTTNPVATEEYGIVADNLQQ
AAV10 (497) QN-----NNSEFAWPGASSWALNGRNSLMNPGPAMASHKEGEDRFFPLSGSLIFGKQ---GTGRDNVDADKVMITNEEEIKTTNPVATESYGQVATNHQS
AAV10 (497) QN-----NNSNFAWTGATKYHLNGRDSLVNPGVAMATHKDDEERFFPSSGVLMFGKQ---GAGKDNVDYSSVMLTSEEEIKTTNPVATEQYGVVADNLQQ
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FIG. 2C-2

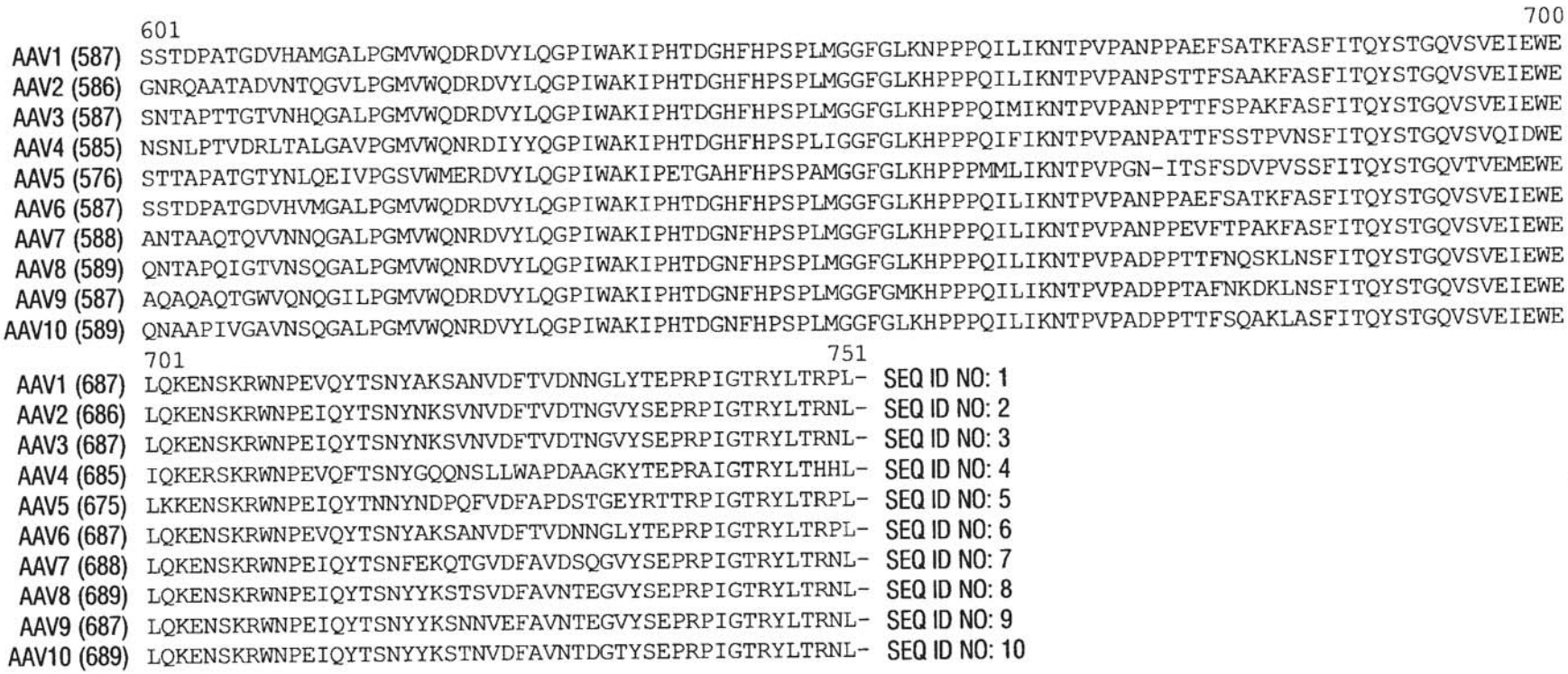

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700
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AAV4 (585) NSNLPTVDRLTALGAVPGMVWQNRDIYYQGPIWAKIPHTDGHFHPSPLIGGFGLKHPPPQIFIKNTPVPANPATTFSSTPVNSFITQYSTGQVSVQIDWE
AAV5 (576) STTAPATGTYNLQEIVPGSVWMERDVYLQGPIWAKIPETGAHFHPSPAMGGFGLKHPPPMMLIKNTPVPGN-ITSFSDVPVSSFITQYSTGQVTVEMEWE
AAV6 (587) SSTDPATGDVHVMGALPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKHPPPQILIKNTPVPANPPAEFSATKFASFITQYSTGQVSVEIEWE
AAV7 (588) ANTAAQTQVVNNQGALPGMVWQNRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGLKHPPPQILIKNTPVPANPPEVFTPAKFASFITQYSTGQVSVEIEWE
AAV8 (589) QNTAPQIGTVNSQGALPGMVWQNRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGLKHPPPQILIKNTPVPADPPTTFNQSKLNSFITQYSTGQVSVEIEWE
AAV9 (587) AQAQAQTGWVQNQGILPGMVWQDRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGMKHPPPQILIKNTPVPADPPTAFNKDKLNSFITQYSTGQVSVEIEWE
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701
751
AAV1 (687) LQKENSKRWNPEVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL- SEQ ID NO: 1
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AAV3 (687) LQKENSKRWNPEIQYTSNYNKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL- SEQ ID NO: 3
AAV4 (685) IQKERSKRWNPEVQFTSNYGQQNSLLWAPDAAGKYTEPRAIGTRYLTHHL- SEQ ID NO: 4
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AAV7 (688) LQKENSKRWNPEIQYTSNFEKQTGVDFAVDSQGVYSEPRPIGTRYLTRNL- SEQ ID NO: 7
AAV8 (689) LQKENSKRWNPEIQYTSNYYKSTSVDFAVNTEGVYSEPRPIGTRYLTRNL- SEQ ID NO: 8
AAV9 (687) LQKENSKRWNPEIQYTSNYYKSNNVEFAVNTEGVYSEPRPIGTRYLTRNL- SEQ ID NO: 9
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FIG. 2C-3

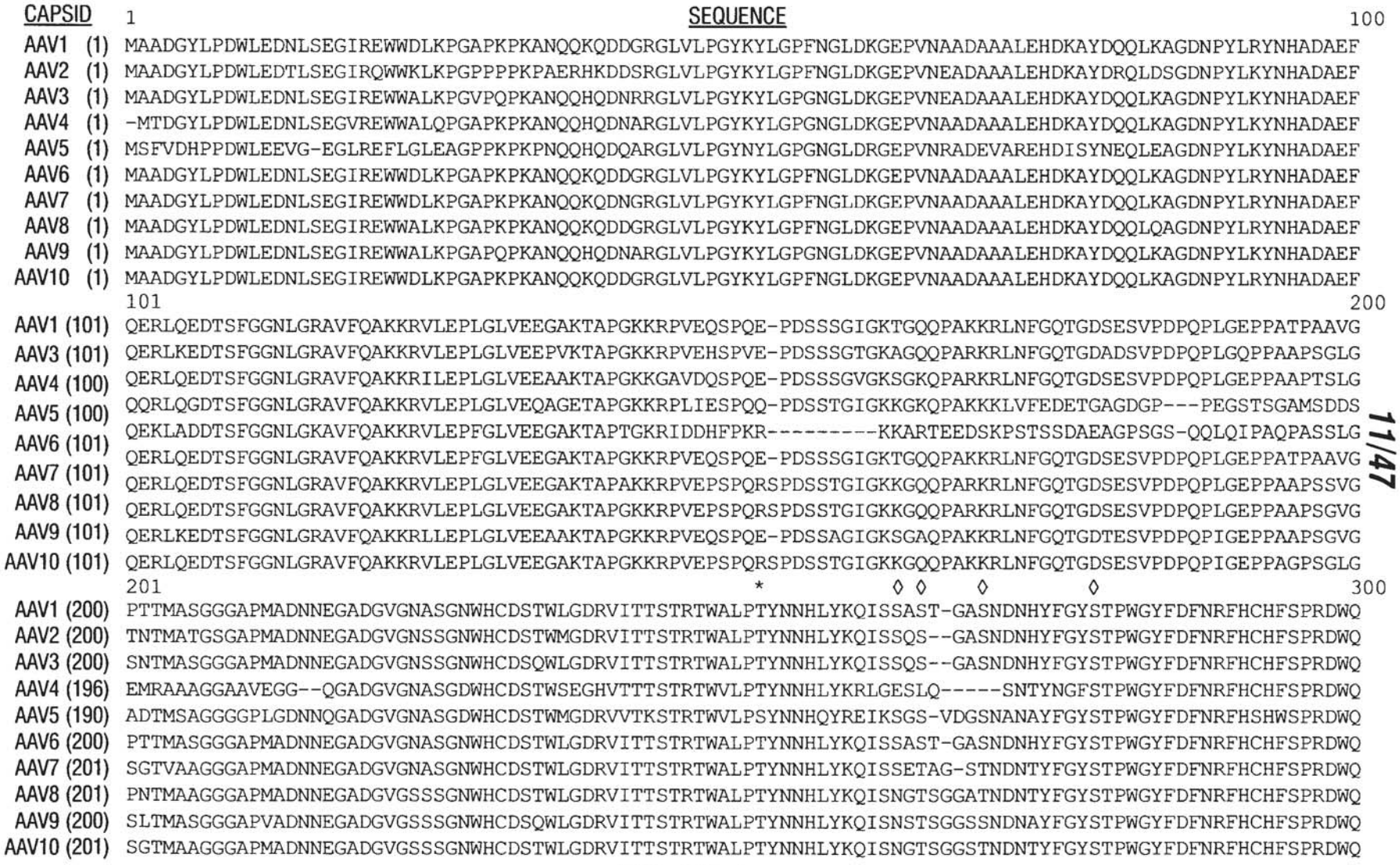

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AAV6 (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
AAV7 (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDNGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
AAV8 (1) MAADGYLPDWLEDNLSEGIREWWALKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLQAGDNPYLRYNHADAEF
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AAV10 (1) MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKQDDGRGLVLPGYKYLGPFNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEF
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200
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AAV5 (100) QQRLQGDTSFGGNLGRAVFQAKKRVLEPLGLVEQAGETAPGKKRPLIESPQQ-PDSSTGIGKKGKQPAKKKLVFEDETGAGDGP---PEGSTSGAMSDDS
AAV6 (101) QEKLADDTSFGGNLGKAVFQAKKRVLEPFGLVEEGAKTAPTGKRIDDHFPKR---------KKARTEEDSKPSTSSDAEAGPSGS-QQLQIPAQPASSLG
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AAV10 (101) QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRSPDSSTGIGKKGQQPAKKRLNFGQTGDSESVPDPQPIGEPPAGPSGLG
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AAV2 (200) TNTMATGSGAPMADNNEGADGVGNSSGNWHCDSTWMGDRVITTSTRTWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDFNRFHCHFSPRDWQ
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AAV4 (196) EMRAAAGGAAVEGG--QGADGVGNASGDWHCDSTWSEGHVTTTSTRTWVLPTYNNHLYKRLGESLQ-----SNTYNGFSTPWGYFDFNRFHCHFSPRDWQ
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FIG. 2D-1

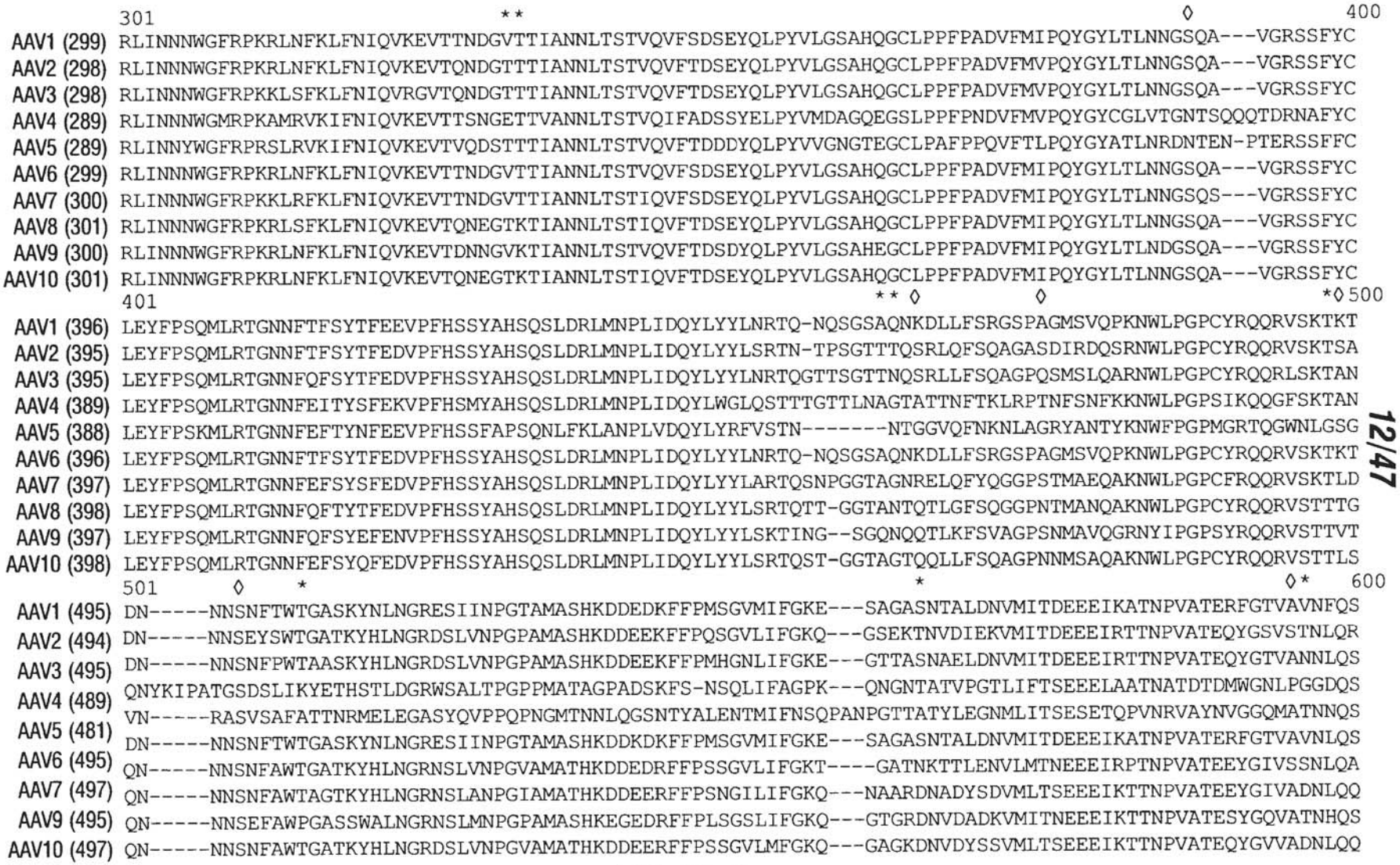

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AAV2 (298) RLINNNWGFRPKRLNFKLFNIQVKEVTQNDGTTTIANNLTSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMVPQYGYLTLNNGSQA---VGRSSFYC
AAV3 (298) RLINNNWGFRPKKLSFKLFNIQVRGVTQNDGTTTIANNLTSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMVPQYGYLTLNNGSQA---VGRSSFYC
AAV4 (289) RLINNNWGMRPKAMRVKIFNIQVKEVTTSNGETTVANNLTSTVQIFADSSYELPYVMDAGQEGSLPPFPNDVFMVPQYGYCGLVTGNTSQQQTDRNAFYC
AAV5 (289) RLINNYWGFRPRSLRVKIFNIQVKEVTVQDSTTTIANNLTSTVQVFTDDDYQLPYVVGNGTEGCLPAFPPQVFTLPQYGYATLNRDNTEN-PTERSSFFC
AAV6 (299) RLINNNWGFRPKRLNFKLFNIQVKEVTTNDGVTTIANNLTSTVQVFSDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
AAV7 (300) RLINNNWGFRPKKLRFKLFNIQVKEVTTNDGVTTIANNLTSTIQVFSDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQS---VGRSSFYC
AAV8 (301) RLINNNWGFRPKRLSFKLFNIQVKEVTQNEGTKTIANNLTSTIQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
AAV9 (300) RLINNNWGFRPKRLNFKLFNIQVKEVTDNNGVKTIANNLTSTVQVFTDSDYQLPYVLGSAHEGCLPPFPADVFMIPQYGYLTLNDGSQA---VGRSSFYC
AAV10 (301) RLINNNWGFRPKRLNFKLFNIQVKEVTQNEGTKTIANNLTSTIQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFYC
401 500
AAV1 (396) LEYFPSQMLRTGNNFTFSYTFEEVPFHSSYAHSQSLDRLMNPLIDQYLYYLNRTQ-NQSGSAQNKDLLFSRGSPAGMSVQPKNWLPGPCYRQQRVSKTKT
AAV2 (395) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTN-TPSGTTTQSRLQFSQAGASDIRDQSRNWLPGPCYRQQRVSKTSA
AAV3 (395) LEYFPSQMLRTGNNFQFSYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLNRTQGTTSGTTNQSRLLFSQAGPQSMSLQARNWLPGPCYRQQRLSKTAN
AAV4 (389) LEYFPSQMLRTGNNFEITYSFEKVPFHSMYAHSQSLDRLMNPLIDQYLWGLQSTTTGTTLNAGTATTNFTKLRPTNFSNFKKNWLPGPSIKQQGFSKTAN
AAV5 (388) LEYFPSKMLRTGNNFEFTYNFEEVPFHSSFAPSQNLFKLANPLVDQYLYRFVSTN-------NTGGVQFNKNLAGRYANTYKNWFPGPMGRTQGWNLGSG
AAV6 (396) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLNRTQ-NQSGSAQNKDLLFSRGSPAGMSVQPKNWLPGPCYRQQRVSKTKT
AAV7 (397) LEYFPSQMLRTGNNFEFSYSFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLARTQSNPGGTAGNRELQFYQGGPSTMAEQAKNWLPGPCFRQQRVSKTLD
AAV8 (398) LEYFPSQMLRTGNNFQFTYTFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTQTT-GGTANTQTLGFSQGGPNTMANQAKNWLPGPCYRQQRVSTTTG
AAV9 (397) LEYFPSQMLRTGNNFQFSYEFENVPFHSSYAHSQSLDRLMNPLIDQYLYYLSKTING--SGQNQQTLKFSVAGPSNMAVQGRNYIPGPSYRQQRVSTTVT
AAV10 (398) LEYFPSQMLRTGNNFEFSYQFEDVPFHSSYAHSQSLDRLMNPLIDQYLYYLSRTQST-GGTAGTQQLLFSQAGPNNMSAQAKNWLPGPCYRQQRVSTTLS
501 600
AAV1 (495) DN-----NNSNFTWTGASKYNLNGRESIINPGTAMASHKDDEDKFFPMSGVMIFGKE---SAGASNTALDNVMITDEEEIKATNPVATERFGTVAVNFQS
AAV2 (494) DN-----NNSEYSWTGATKYHLNGRDSLVNPGPAMASHKDDEEKFFPQSGVLIFGKQ---GSEKTNVDIEKVMITDEEEIRTTNPVATEQYGSVSTNLQR
AAV3 (495) DN-----NNSNFPWTAASKYHLNGRDSLVNPGPAMASHKDDEEKFFPMHGNLIFGKE---GTTASNAELDNVMITDEEEIRTTNPVATEQYGTVANNLQS
AAV4 (489) QNYKIPATGSDSLIKYETHSTLDGRWSALTPGPPMATAGPADSKFS-NSQLIFAGPK---QNGNTATVPGTLIFTSEEELAATNATDTDMWGNLPGGDQS
AAV5 (481) VN-----RASVSAFATTNRMELEGASYQVPPQPNGMTNNLQGSNTYALENTMIFNSQPANPGTTATYLEGNMLITSESETQPVNRVAYNVGGQMATNNQS
AAV6 (495) DN-----NNSNFTWTGASKYNLNGRESIINPGTAMASHKDDKDKFFPMSGVMIFGKE---SAGASNTALDNVMITDEEEIKATNPVATERFGTVAVNLQS
AAV7 (497) QN-----NNSNFAWTGATKYHLNGRNSLVNPGVAMATHKDDEDRFFPSSGVLIFGKT----GATNKTTLENVLMTNEEEIRPTNPVATEEYGIVSSNLQA
AAV9 (495) QN-----NNSNFAWTAGTKYHLNGRNSLANPGIAMATHKDDEERFFPSNGILIFGKQ---NAARDNADYSDVMLTSEEEIKTTNPVATEEYGIVADNLQQ
AAV10 (497) QN-----NNSEFAWPGASSWALNGRNSLMNPGPAMASHKEGEDRFFPLSGSLIFGKQ---GTGRDNVDADKVMITNEEEIKTTNPVATESYGQVATNHQS
AAV10 (497) QN-----NNSNFAWTGATKYHLNGRDSLVNPGVAMATHKDDEERFFPSSGVLMFGKQ---GAGKDNVDYSSVMLTSEEEIKTTNPVATEQYGVVADNLQQ

FIG. 2D-2

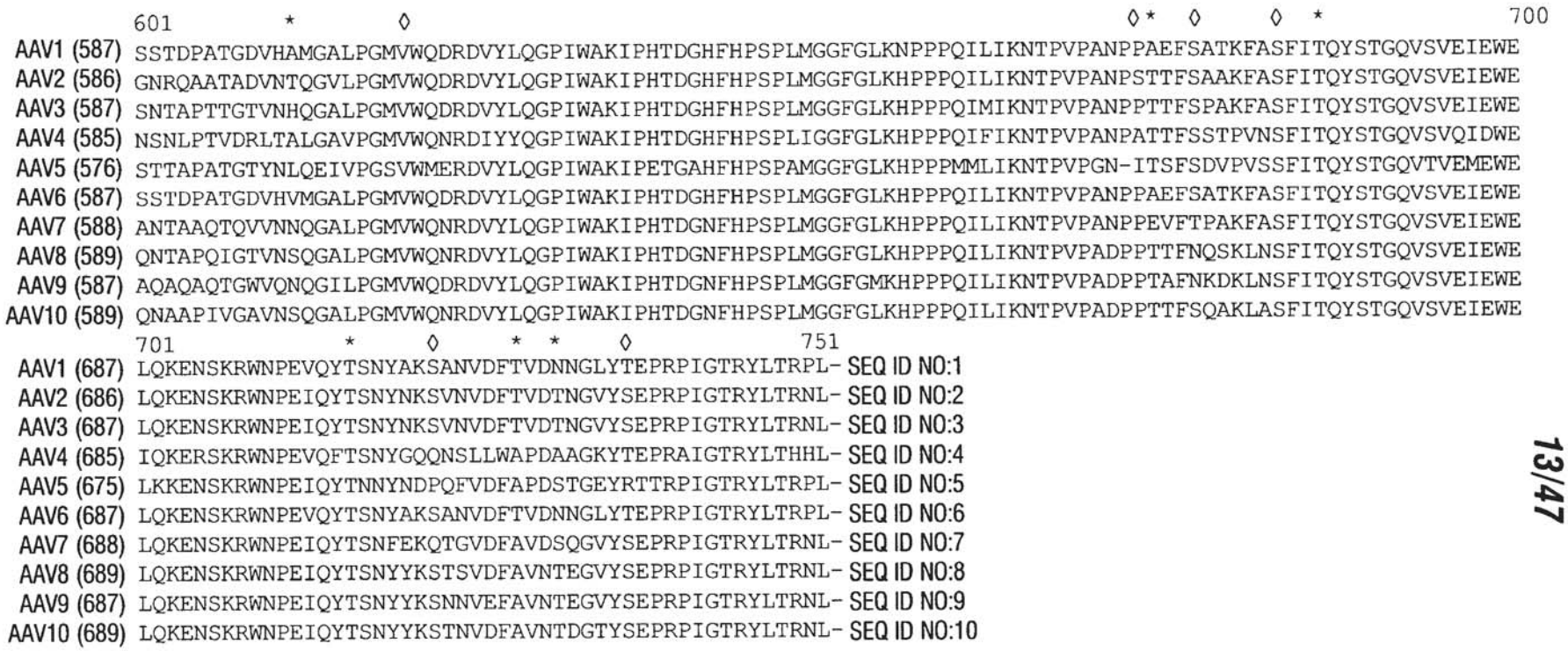

601 * ◊ ◊* ◊ ◊ * 700
AAV1 (587) SSTDPATGDVHAMGALPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKNPPPQILIKNTPVPANPPAEFSATKFASFITQYSTGQVSVEIEWE
AAV2 (586) GNRQAATADVNTQGVLPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKHPPPQILIKNTPVPANPSTTFSAAKFASFITQYSTGQVSVEIEWE
AAV3 (587) SNTAPTTGTVNHQGALPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKHPPPQIMIKNTPVPANPPTTFSPAKFASFITQYSTGQVSVEIEWE
AAV4 (585) NSNLPTVDRLTALGAVPGMVWQNRDIYYQGPIWAKIPHTDGHFHPSPLIGGFGLKHPPPQIFIKNTPVPANPATTFSSTPVNSFITQYSTGQVSVQIDWE
AAV5 (576) STTAPATGTYNLQEIVPGSVWMERDVYLQGPIWAKIPETGAHFHPSPAMGGFGLKHPPPMMLIKNTPVPGN-ITSFSDVPVSSFITQYSTGQVTVEMEWE
AAV6 (587) SSTDPATGDVHVMGALPGMVWQDRDVYLQGPIWAKIPHTDGHFHPSPLMGGFGLKHPPPQILIKNTPVPANPPAEFSATKFASFITQYSTGQVSVEIEWE
AAV7 (588) ANTAAQTQVVNNQGALPGMVWQNRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGLKHPPPQILIKNTPVPANPPEVFTPAKFASFITQYSTGQVSVEIEWE
AAV8 (589) QNTAPQIGTVNSQGALPGMVWQNRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGLKHPPPQILIKNTPVPADPPTTFNQSKLNSFITQYSTGQVSVEIEWE
AAV9 (587) AQAQAQTGWVQNQGILPGMVWQDRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGMKHPPPQILIKNTPVPADPPTAFNKDKLNSFITQYSTGQVSVEIEWE
AAV10 (589) QNAAPIVGAVNSQGALPGMVWQNRDVYLQGPIWAKIPHTDGNFHPSPLMGGFGLKHPPPQILIKNTPVPADPPTTFSQAKLASFITQYSTGQVSVEIEWE
701 * ◊ * * ◊ 751
AAV1 (687) LQKENSKRWNPEVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL- SEQ ID NO:1
AAV2 (686) LQKENSKRWNPEIQYTSNYNKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL- SEQ ID NO:2
AAV3 (687) LQKENSKRWNPEIQYTSNYNKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL- SEQ ID NO:3
AAV4 (685) IQKERSKRWNPEVQFTSNYGQQNSLLWAPDAAGKYTEPRAIGTRYLTHHL- SEQ ID NO:4
AAV5 (675) LKKENSKRWNPEIQYTNNYNDPQFVDFAPDSTGEYRTTRPIGTRYLTRPL- SEQ ID NO:5
AAV6 (687) LQKENSKRWNPEVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL- SEQ ID NO:6
AAV7 (688) LQKENSKRWNPEIQYTSNFEKQTGVDFAVDSQGVYSEPRPIGTRYLTRNL- SEQ ID NO:7
AAV8 (689) LQKENSKRWNPEIQYTSNYYKSTSVDFAVNTEGVYSEPRPIGTRYLTRNL- SEQ ID NO:8
AAV9 (687) LQKENSKRWNPEIQYTSNYYKSNNVEFAVNTEGVYSEPRPIGTRYLTRNL- SEQ ID NO:9
AAV10 (689) LQKENSKRWNPEIQYTSNYYKSTNVDFAVNTDGTYSEPRPIGTRYLTRNL- SEQ ID NO:10

FIG. 2D-3

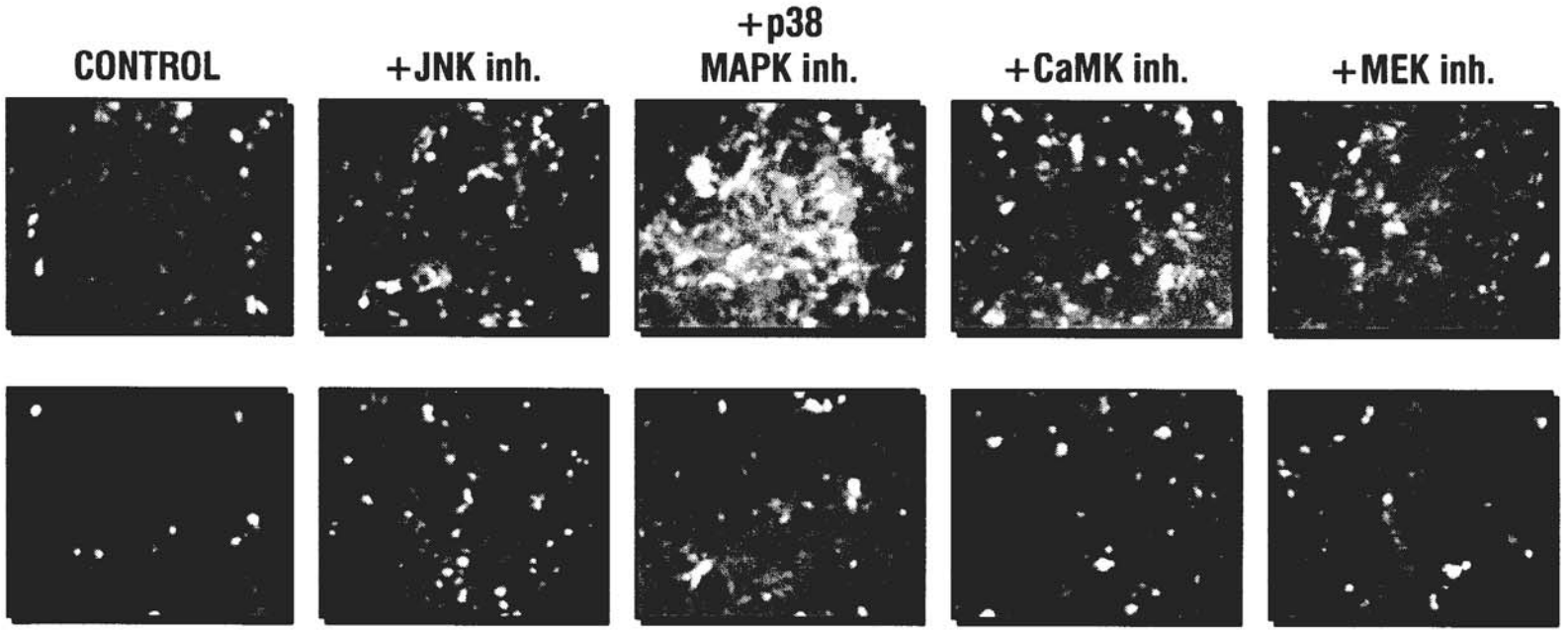


FIG. 3A

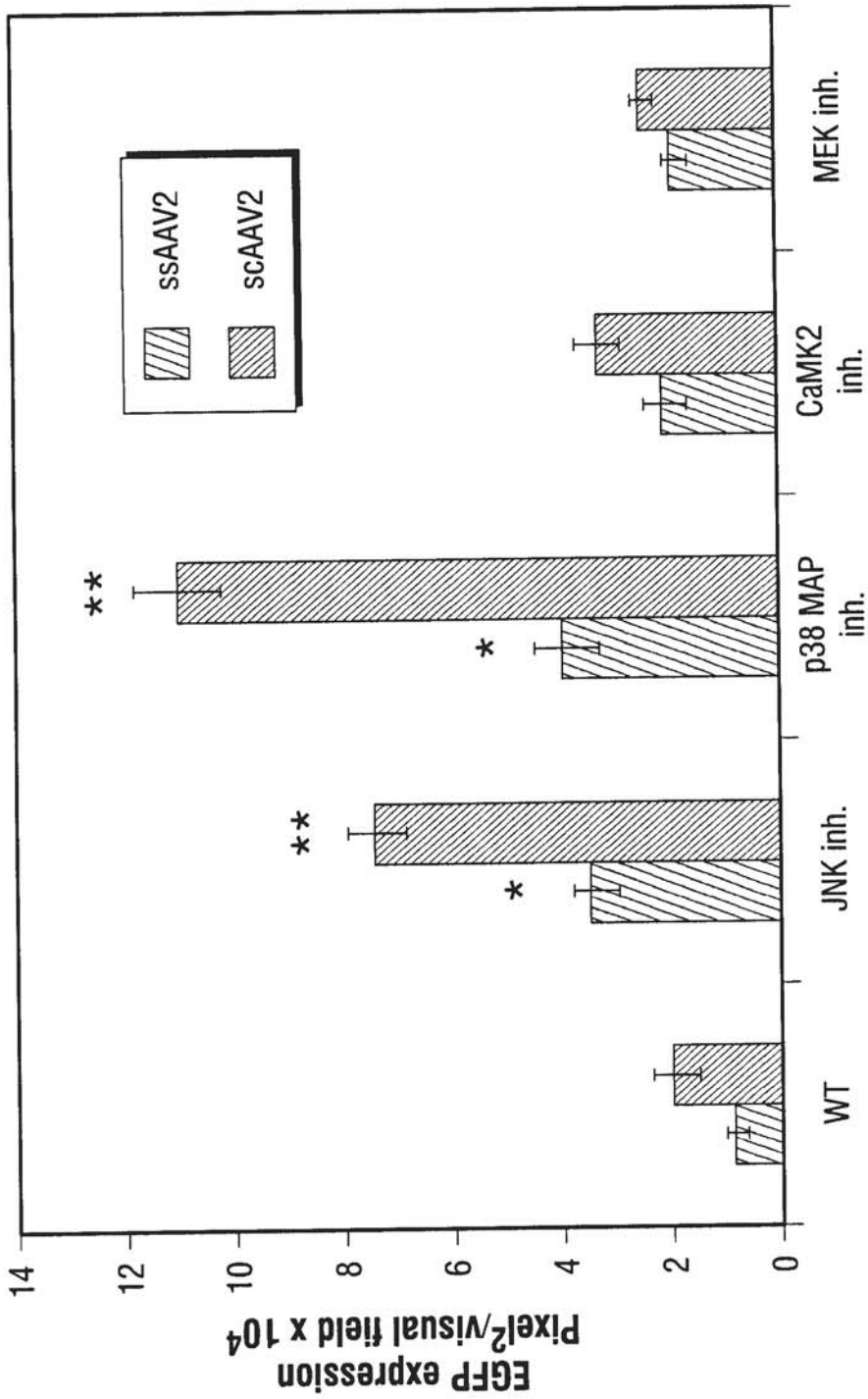

EGFP expression
Pixel²/visual field x 10⁴
0
2
4
6
8
10
12
14
ssAAV2
scAAV2
WT
JNK inh.
p38 MAP inh.
CaMK2 inh.
MEK inh.
*
**
*
**

FIG. 3B

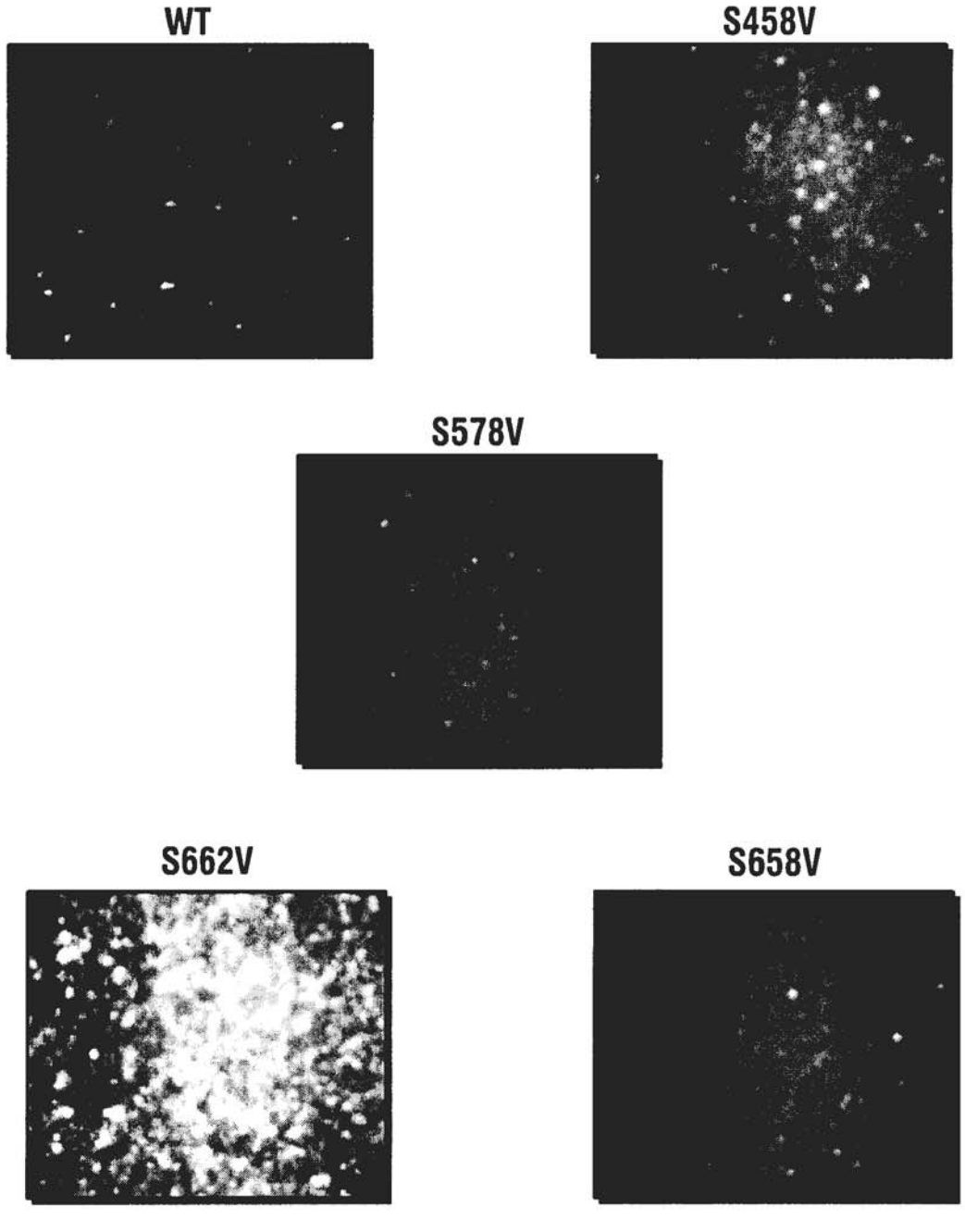


FIG. 4A

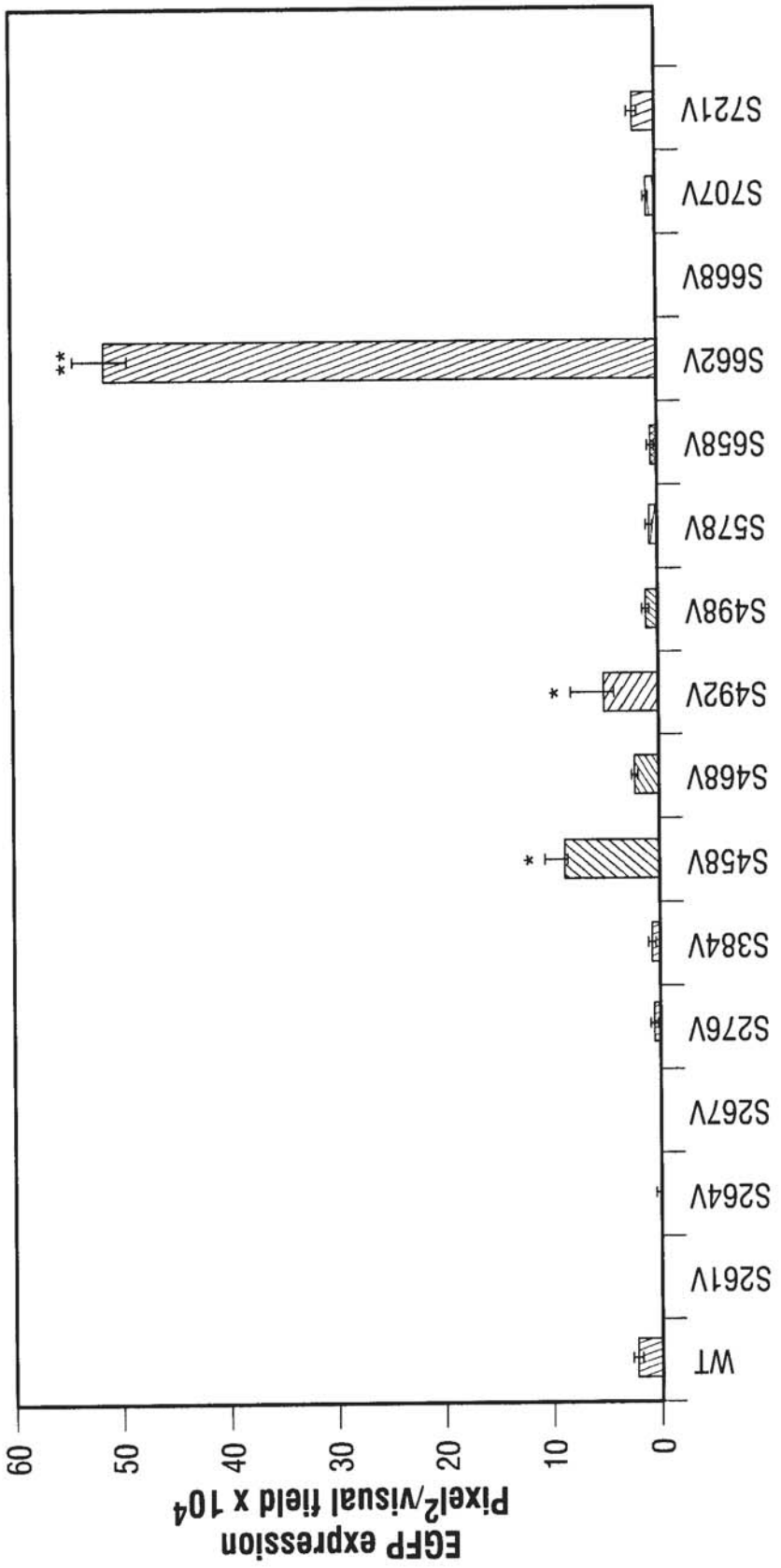

EGFP expression
Pixel²/visual field x 10⁴
0
10
20
30
40
50
60
WT
S261V
S264V
S267V
S276V
S384V
S458V
S468V
S492V
S498V
S578V
S658V
S662V
S668V
S707V
S721V
*
*
**

FIG. 4B

MUTANT	PACKAGING EFFICIENCY	TRANSDUCTION EFFICIENCY
AAV2-S261V	~10-FOLD LOWER	-*
AAV2-S264V	NO CHANGE	-*
AAV2-S267V	NO DNAse I- RESISTANT PARTICLES	-*
AAV2-S276V	~10-FOLD LOWER	-*
AAV2-S384V	~3-FOLD HIGHER	~10-FOLD LOWER
AAV2-S458V	NO CHANGE	~4-FOLD HIGHER
AAV2-S468V	~5-FOLD HIGHER	NO CHANGE
AAV2-S492V	NO CHANGE	~2-FOLD HIGHER
AAV2-S498V	NO CHANGE	~10-FOLD LOWER
AAV2-S578V	NO CHANGE	~10-FOLD LOWER
AAV2-S658V	~10-FOLD LOWER	-*
AAV2-S662V	NO CHANGE	~25-FOLD HIGHER
AAV2-S668V	NO DNAse I- RESISTANT PARTICLES	-*
AAV2-S707V	NO CHANGE	~10-FOLD LOWER
AAV2-S721V	NO CHANGE	NO CHANGE

FIG. 5

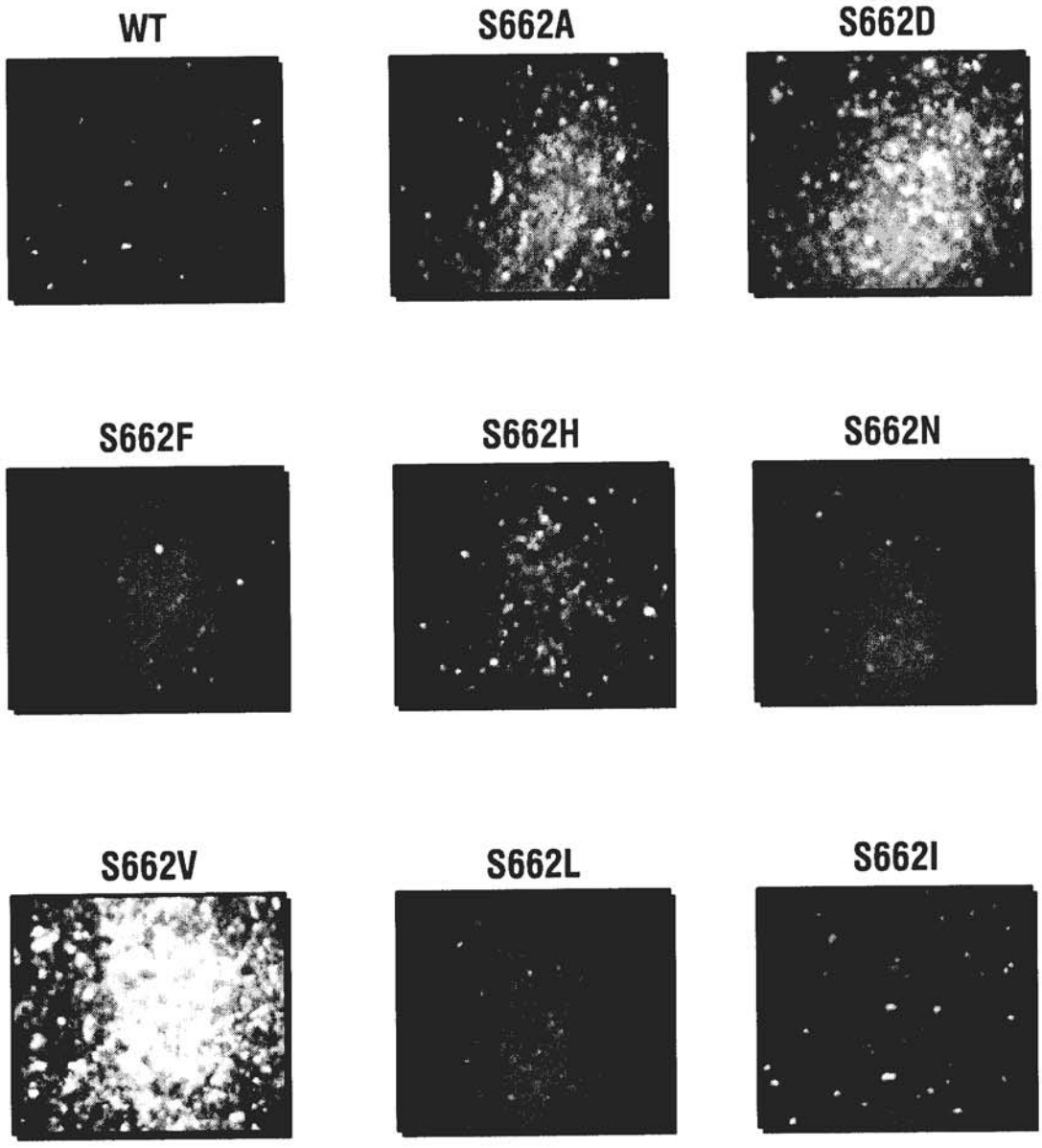


FIG. 6A

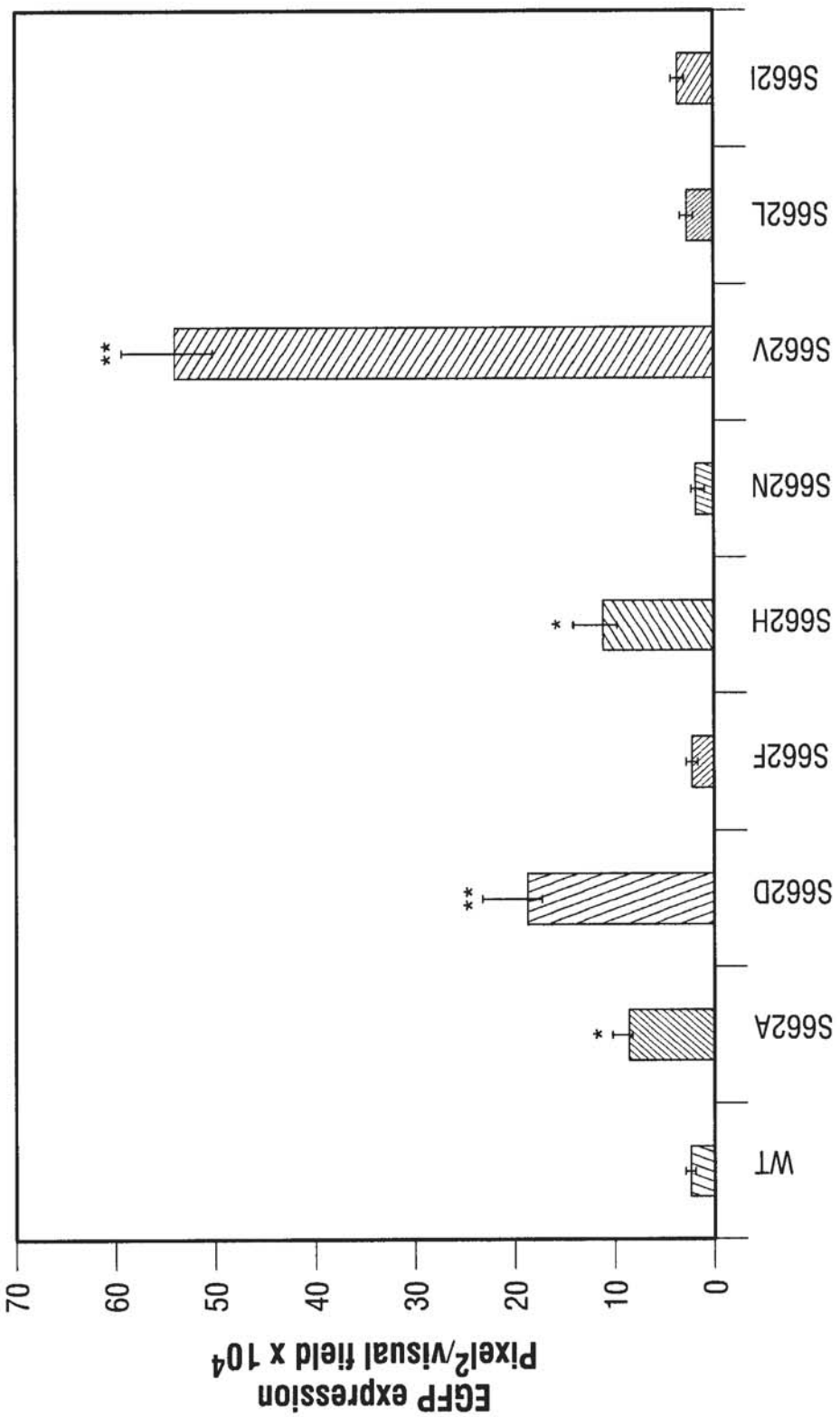

EGFP expression
Pixel²/visual field x 10⁴
0
10
20
30
40
50
60
70
WT
S662A
S662D
S662F
S662H
S662N
S662V
S662L
S662I
*
**
*
**

FIG. 6B

MUTANT	PACKAGING EFFICIENCY	TRANSDUCTION EFFICIENCY
AAV2-S662V	NO CHANGE	~25-FOLD HIGHER
AAV2-S662A	~5-FOLD HIGHER	~3-FOLD HIGHER
AAV2-S662D	NO CHANGE	~8-FOLD HIGHER
AAV2-S662F	~10-FOLD LOWER	NO CHANGE
AAV2-S662H	NO CHANGE	~4-FOLD HIGHER
AAV2-S662N	~10-FOLD LOWER	NO CHANGE
AAV2-S662L	~10-FOLD LOWER	NO CHANGE
AAV2-S662I	~10-FOLD LOWER	NO CHANGE

FIG. 7

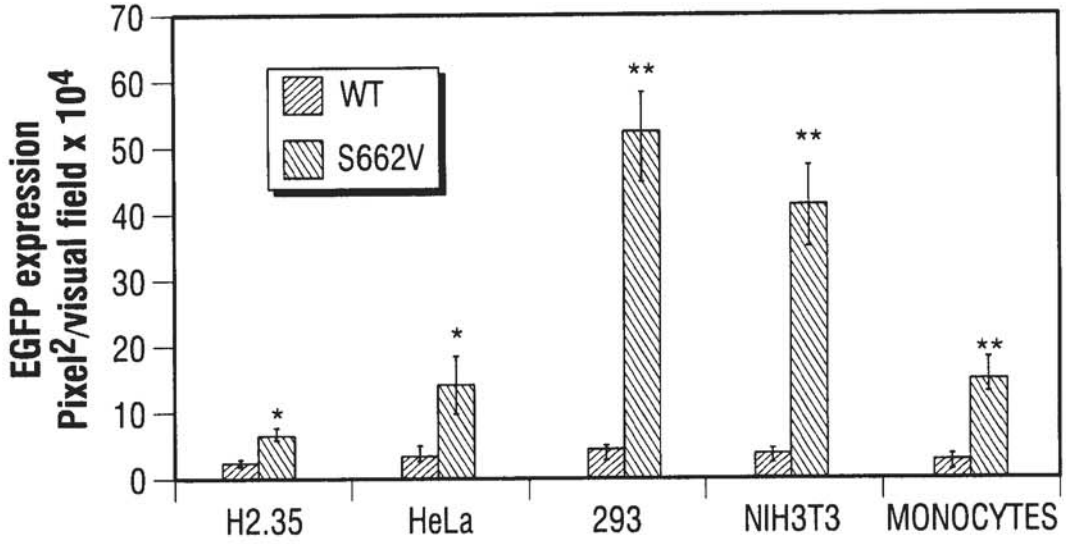

EGFP expression
Pixel^2/visual field x 10^4
70
60
50
40
30
20
10
0
WT
S662V
*
*
**
**
**
H2.35
HeLa
293
NIH3T3
MONOCYTES

FIG. 8A

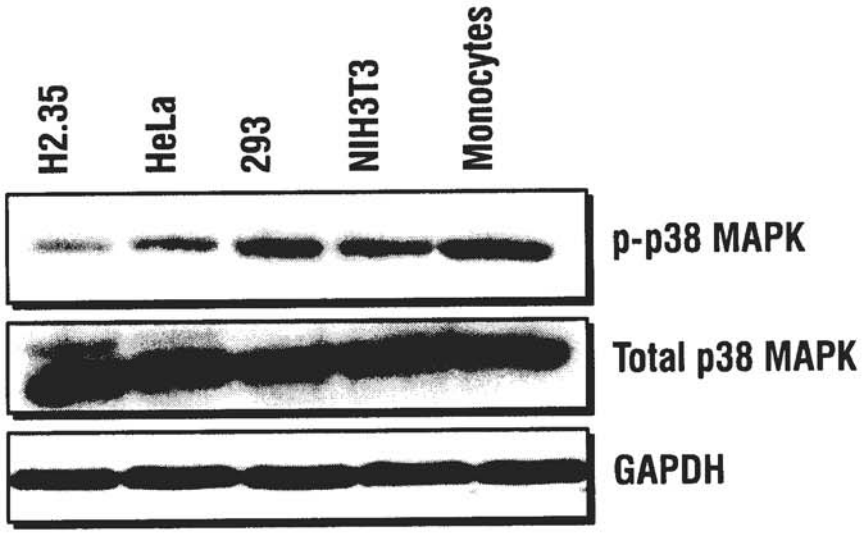

H2.35
HeLa
293
NIH3T3
Monocytes
p-p38 MAPK
Total p38 MAPK
GAPDH

FIG. 8B

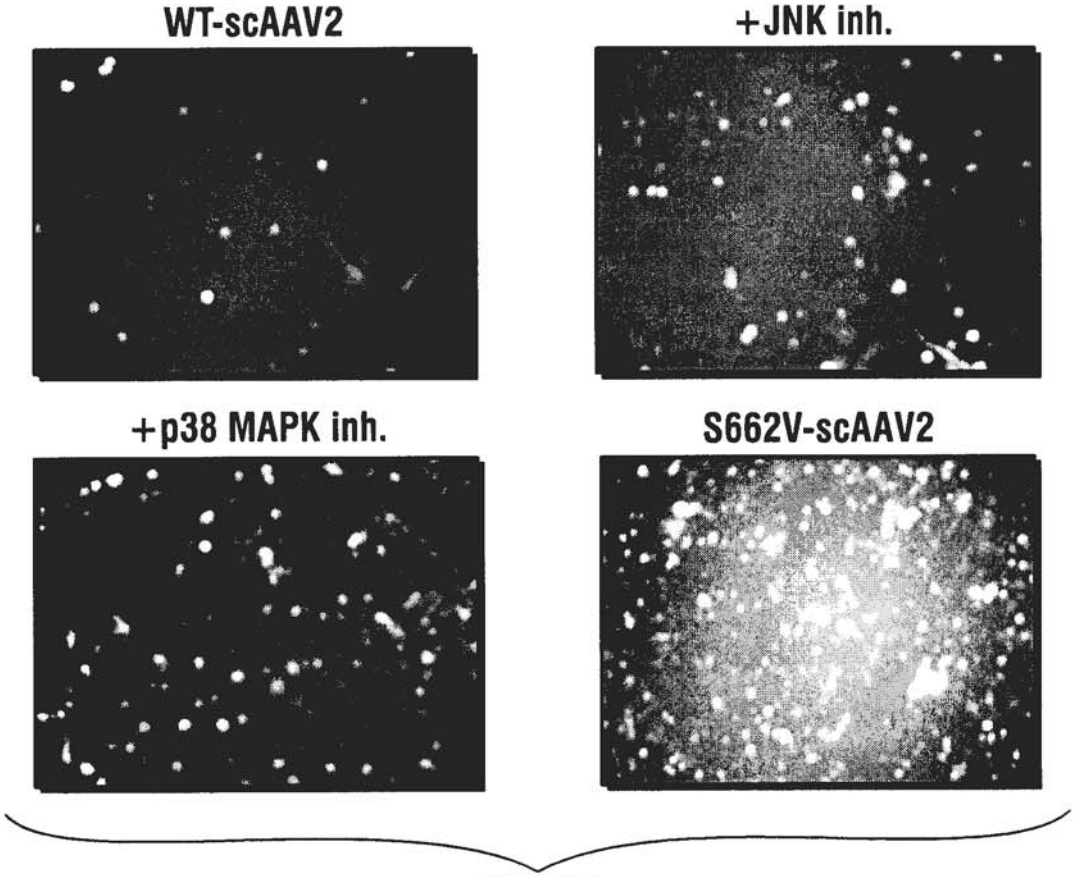

WT-scAAV2
+JNK inh.
+p38 MAPK inh.
S662V-scAAV2

FIG. 9A

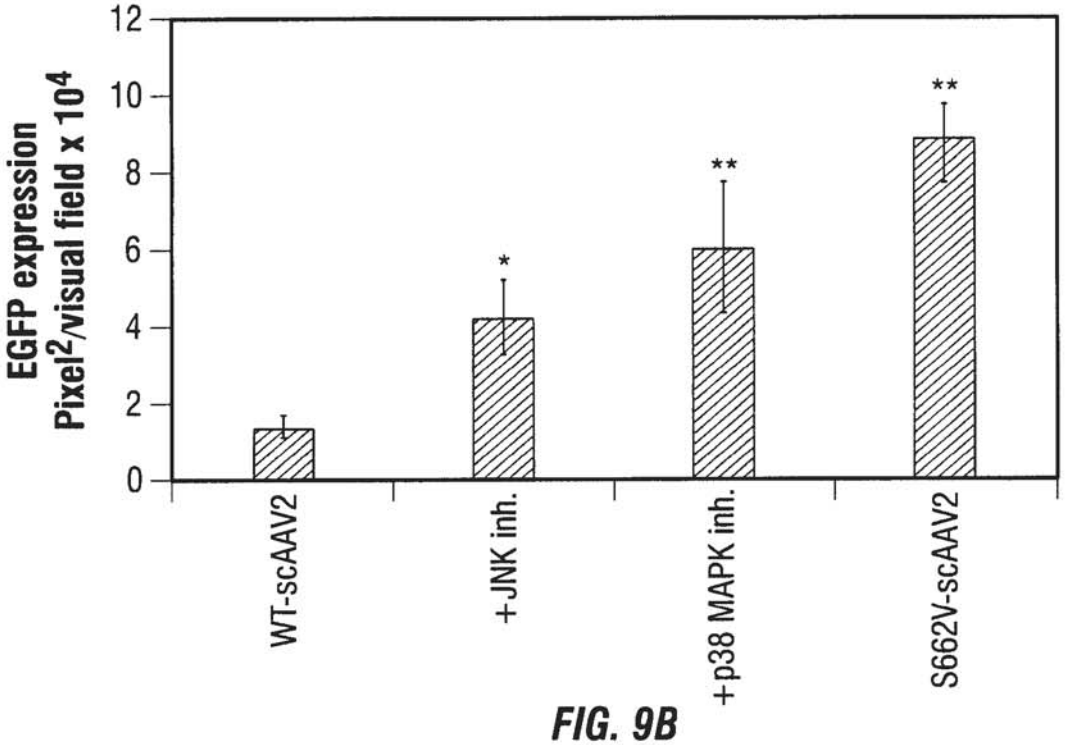

EGFP expression
Pixel2/visual field x 10^4
12
10
8
6
4
2
0
*
**
**
**
WT-scAAV2
+JNK inh.
+p38 MAPK inh.
S662V-scAAV2

FIG. 9B

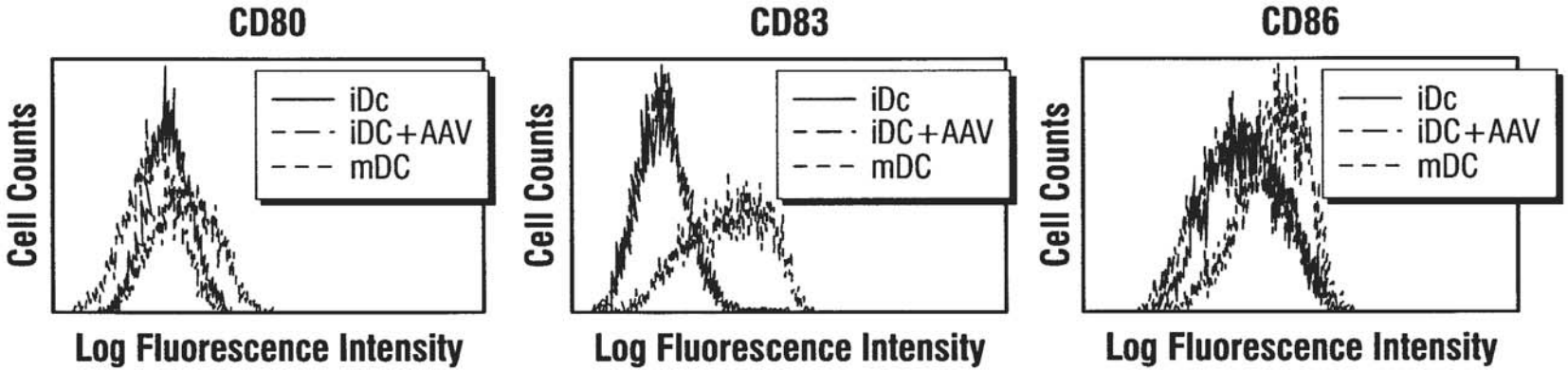

CD80
Cell Counts
iDc
iDC+AAV
mDC
Log Fluorescence Intensity
CD83
Cell Counts
iDc
iDC+AAV
mDC
Log Fluorescence Intensity
CD86
Cell Counts
iDc
iDC+AAV
mDC
Log Fluorescence Intensity

FIG. 9C

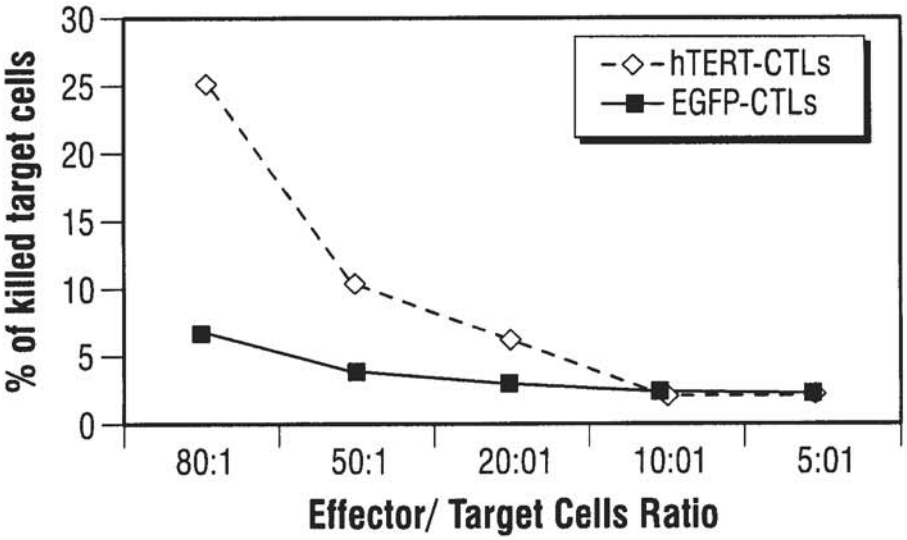

30
25
20
15
10
5
0
% of killed target cells
hTERT-CTLs
EGFP-CTLs
80:1
50:1
20:01
10:01
5:01
Effector/ Target Cells Ratio

FIG. 10

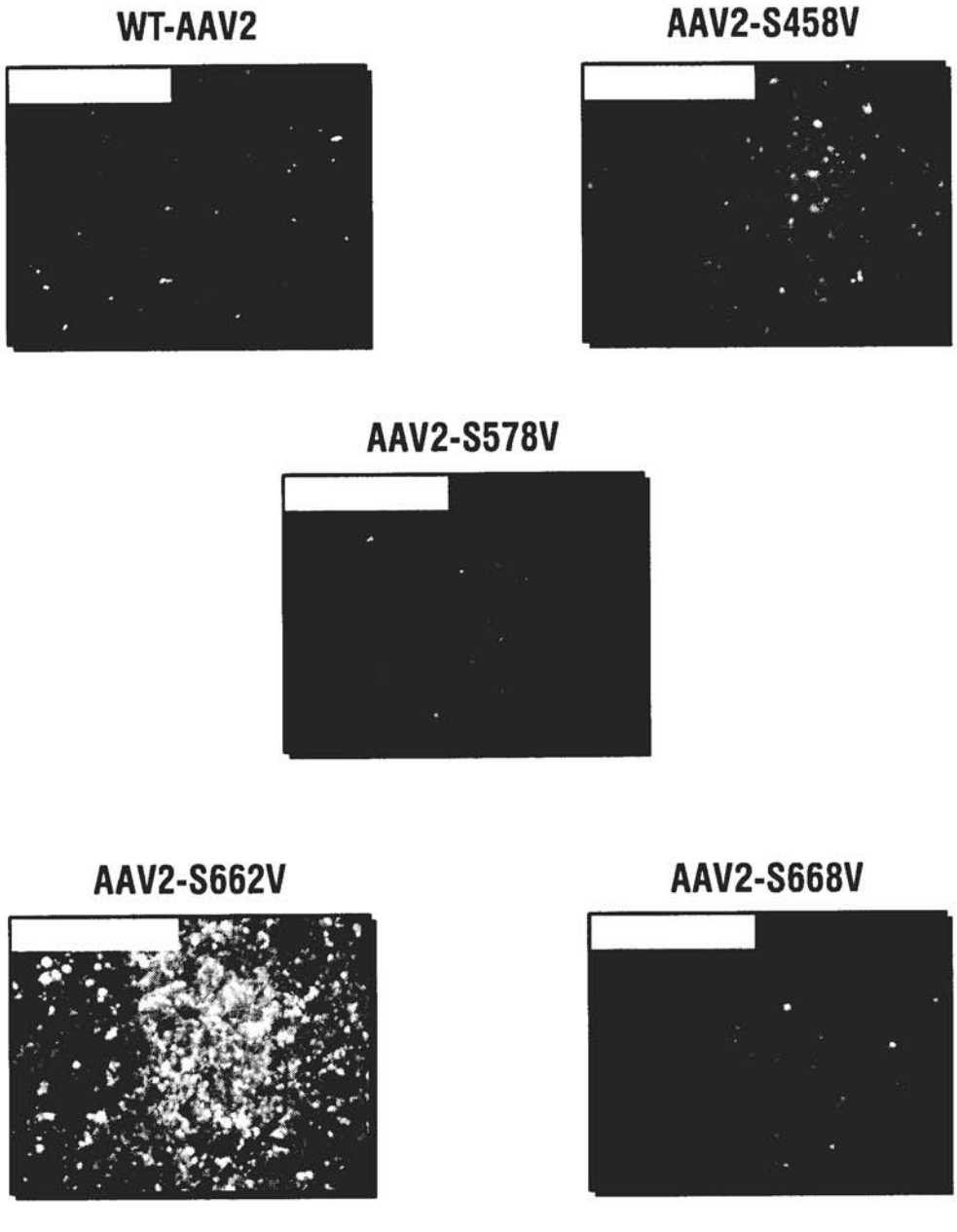


FIG. 11A

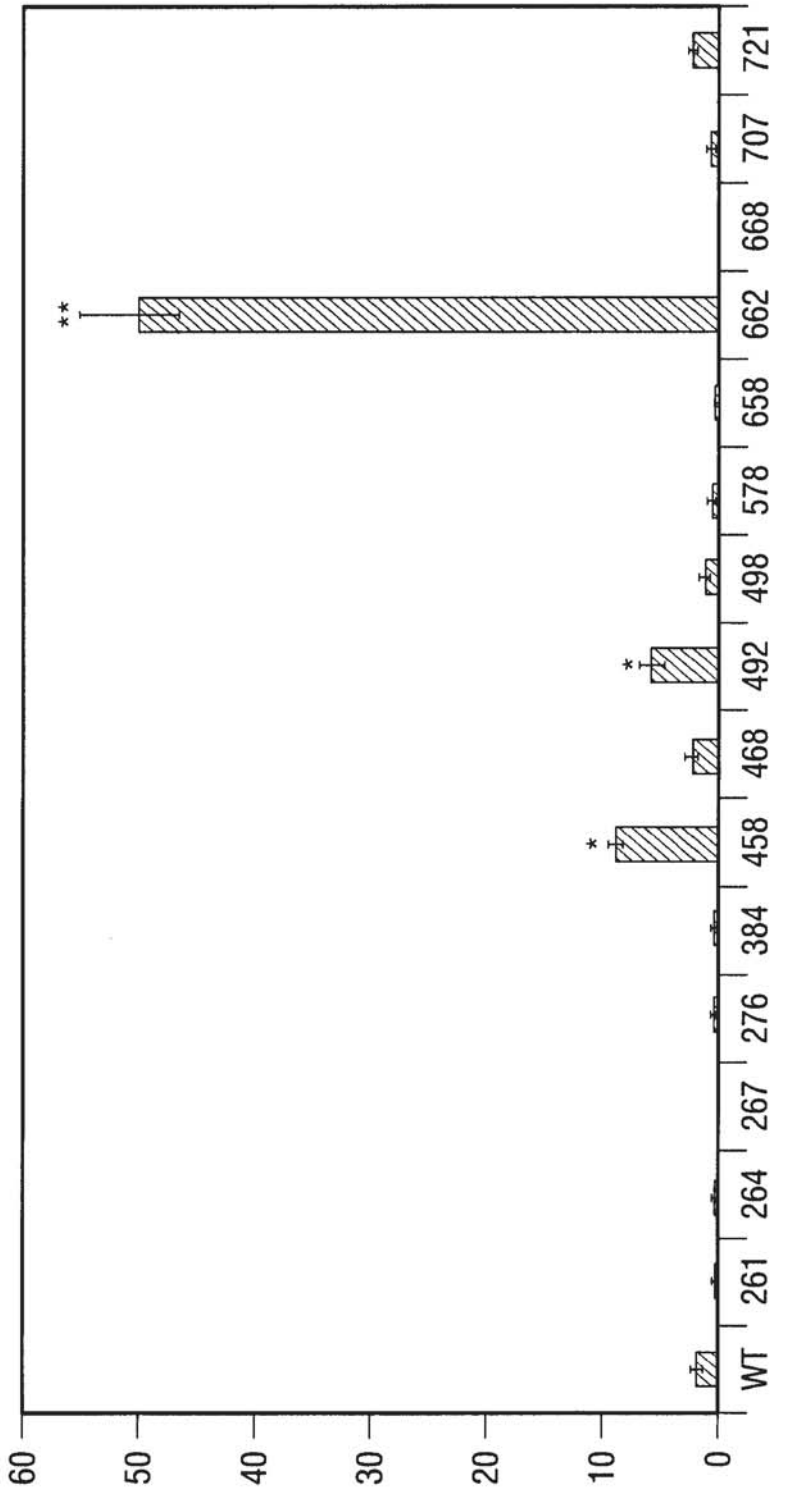

60
50
40
30
20
10
0
WT
261
264
267
276
384
458
468
492
498
578
658
662
668
707
721
**
*
*

FIG. 11B

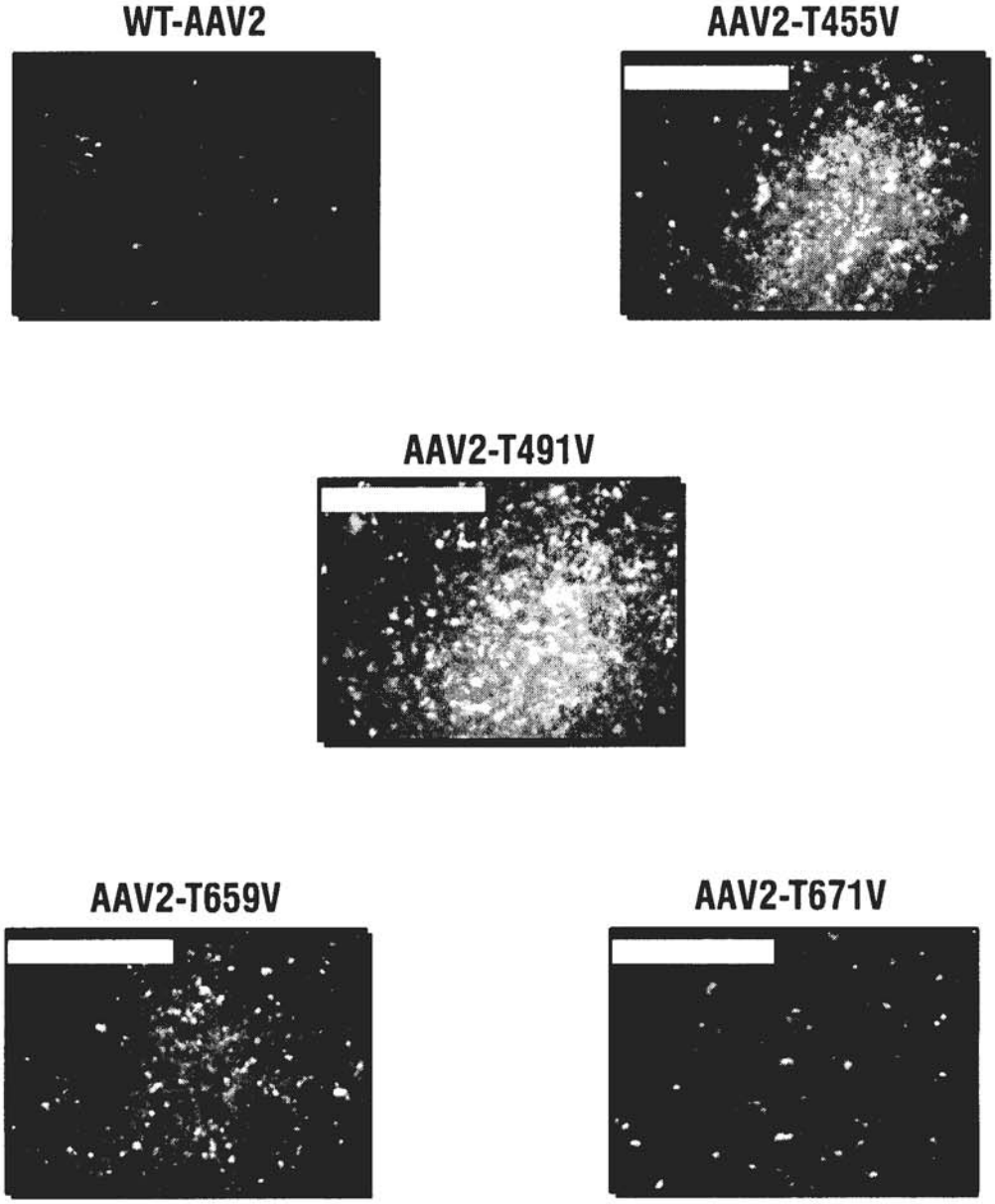


FIG. 12A

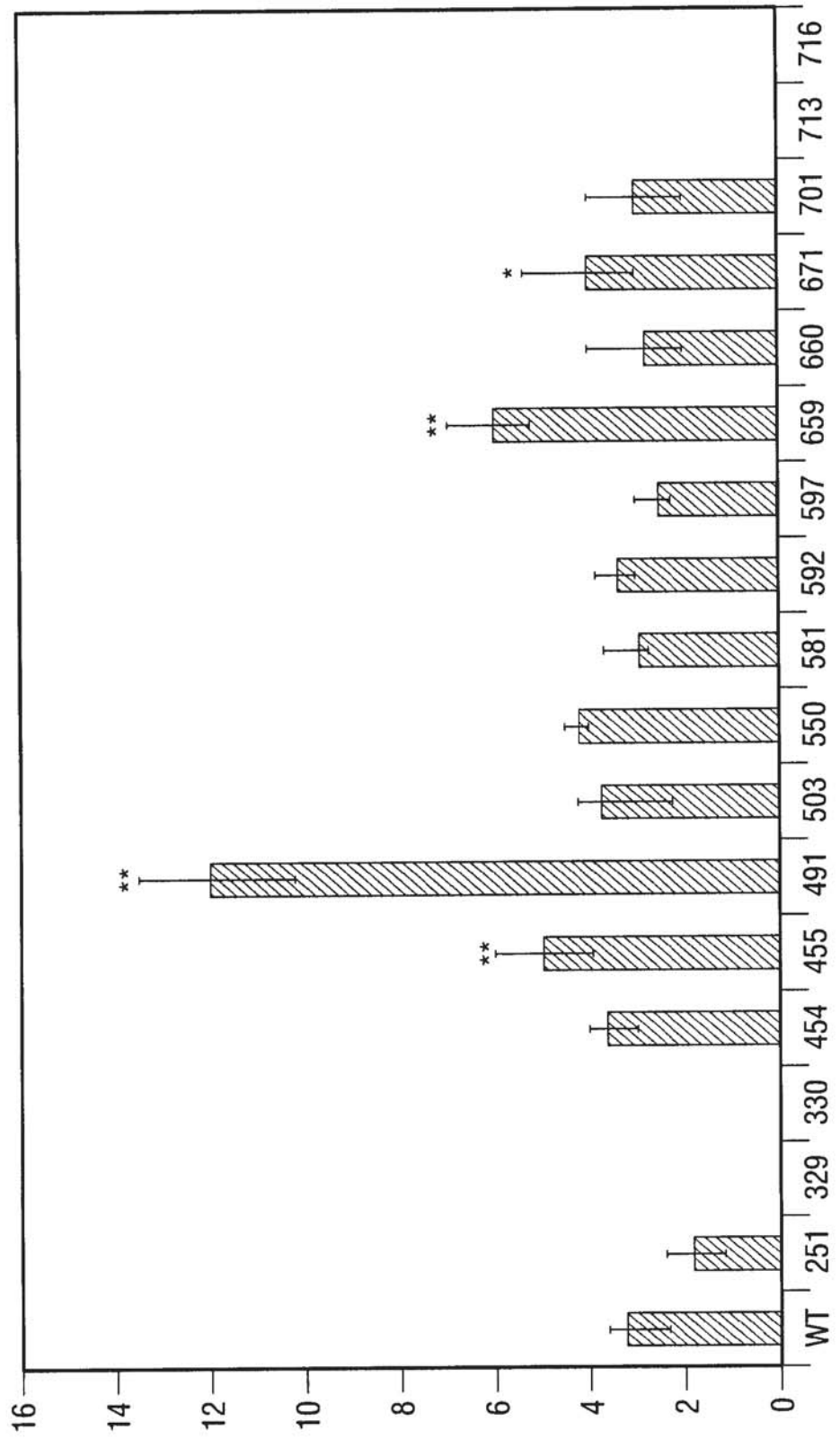

16
14
12
10
8
6
4
2
0
WT
251
329
330
454
455
491
503
550
581
592
597
659
660
671
701
713
716
**
**
**
*

FIG. 12B

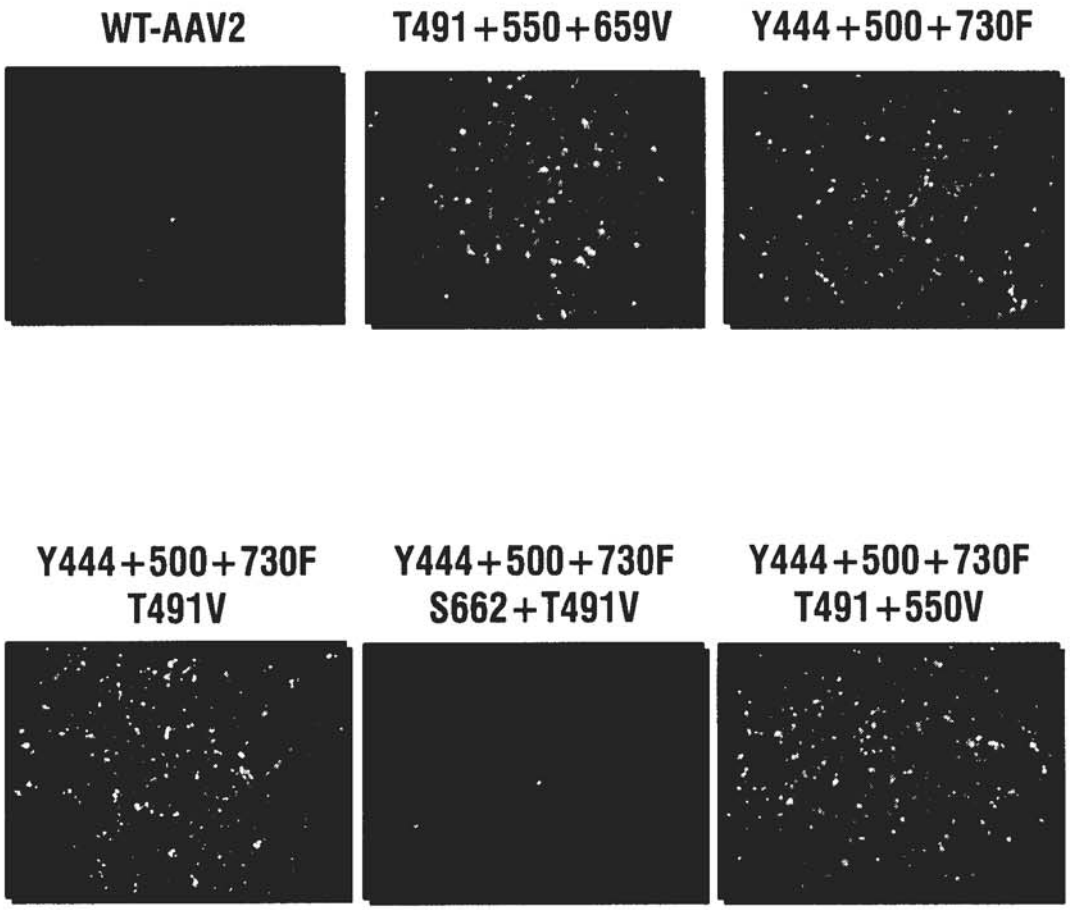

WT-AAV2
T491+550+659V
Y444+500+730F
Y444+500+730F
T491V
Y444+500+730F
S662+T491V
Y444+500+730F
T491+550V

FIG. 13A

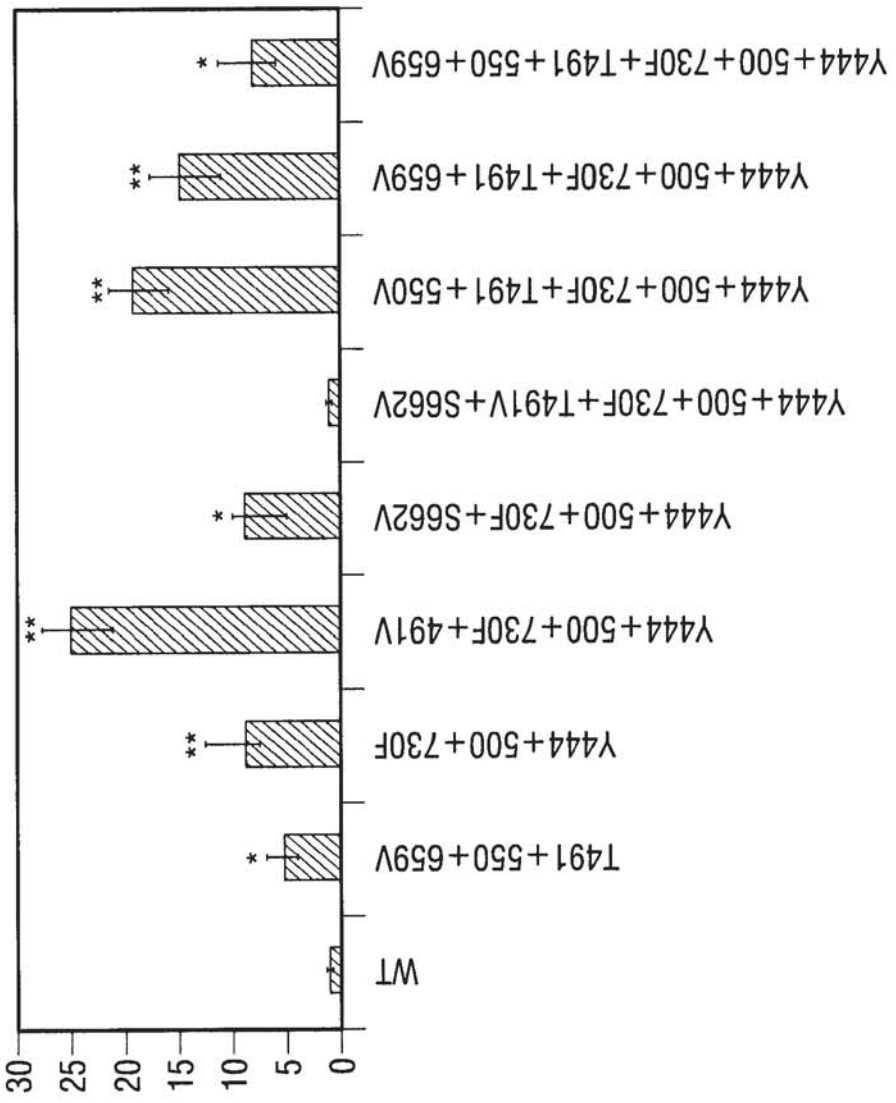

WT
T491+550+659V
Y444+500+730F
Y444+500+730F+491V
Y444+500+730F+S662V
Y444+500+730F+T491V+S662V
Y444+500+730F+T491+550V
Y444+500+730F+T491+659V
Y444+500+730F+T491+550+659V
0
5
10
15
20
25
30
*
**
**
**
*
**
**
*

FIG. 13B

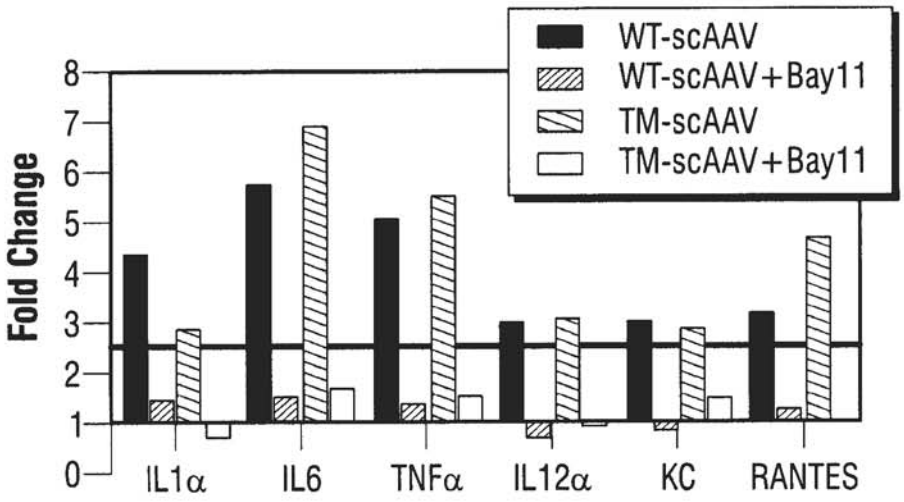


FIG. 14A

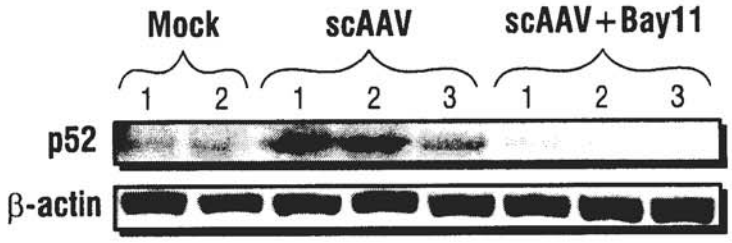


FIG. 14B

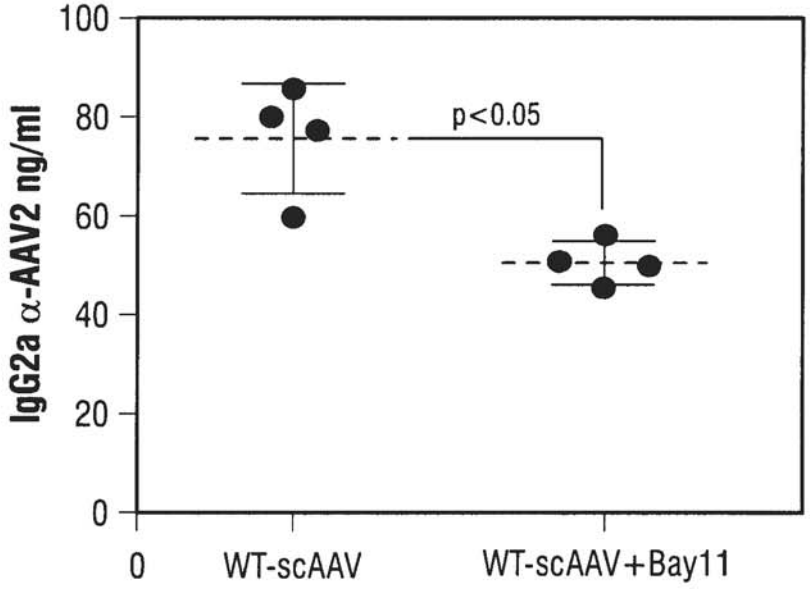


FIG. 14C

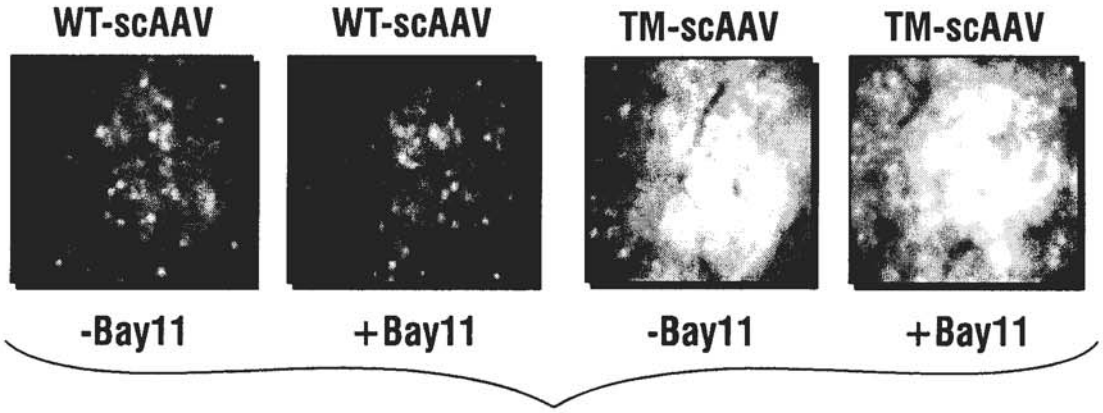


FIG. 14D

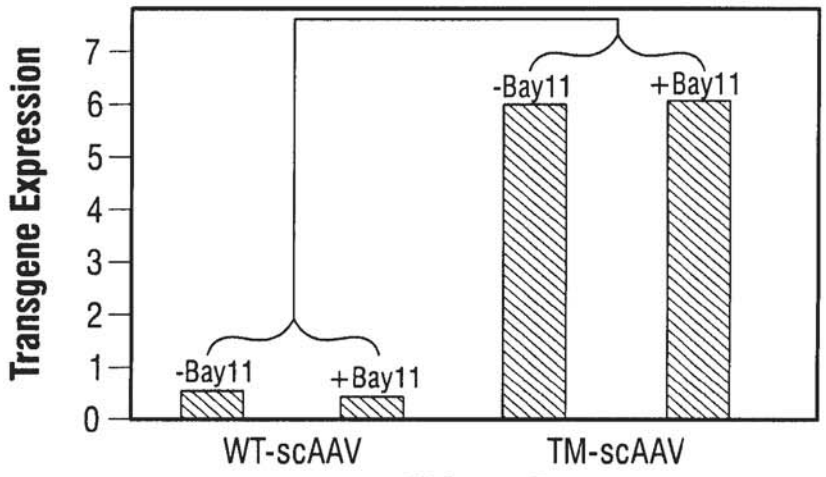


FIG. 14E

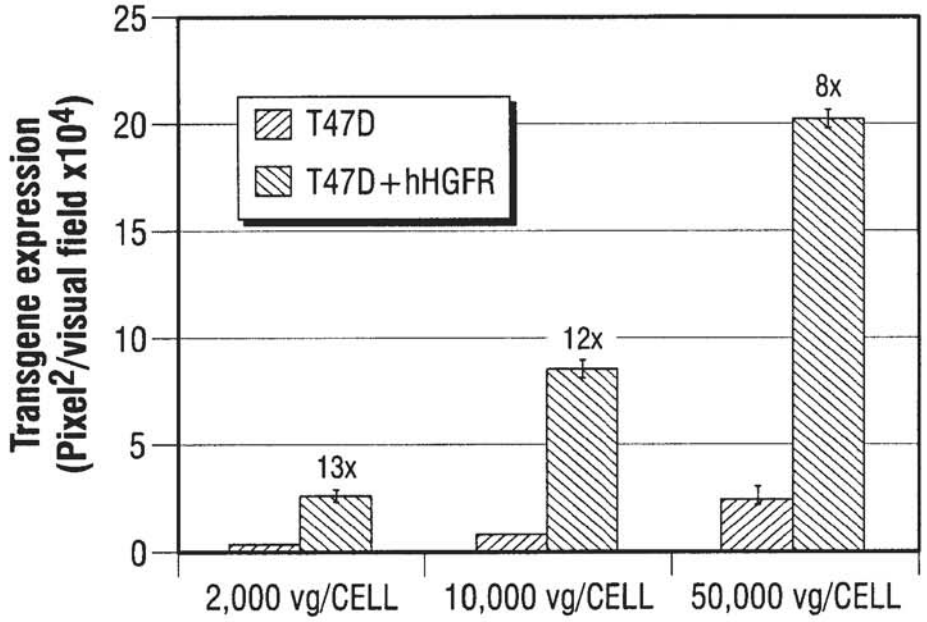


FIG. 15A

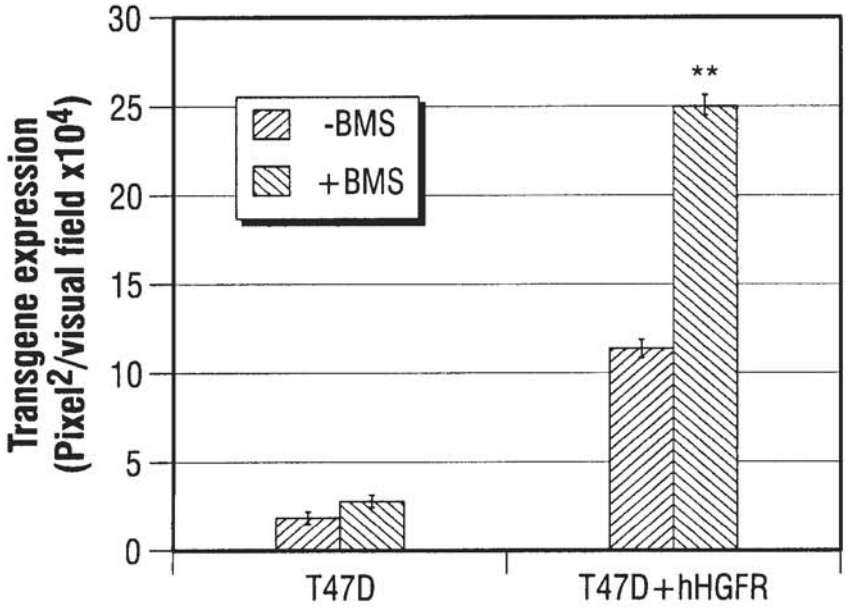


FIG. 15B

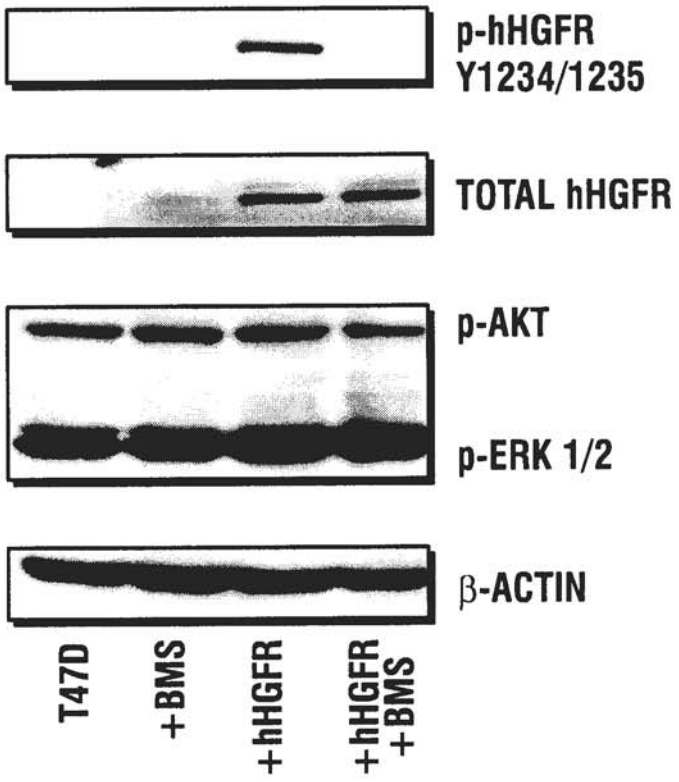


FIG. 15C

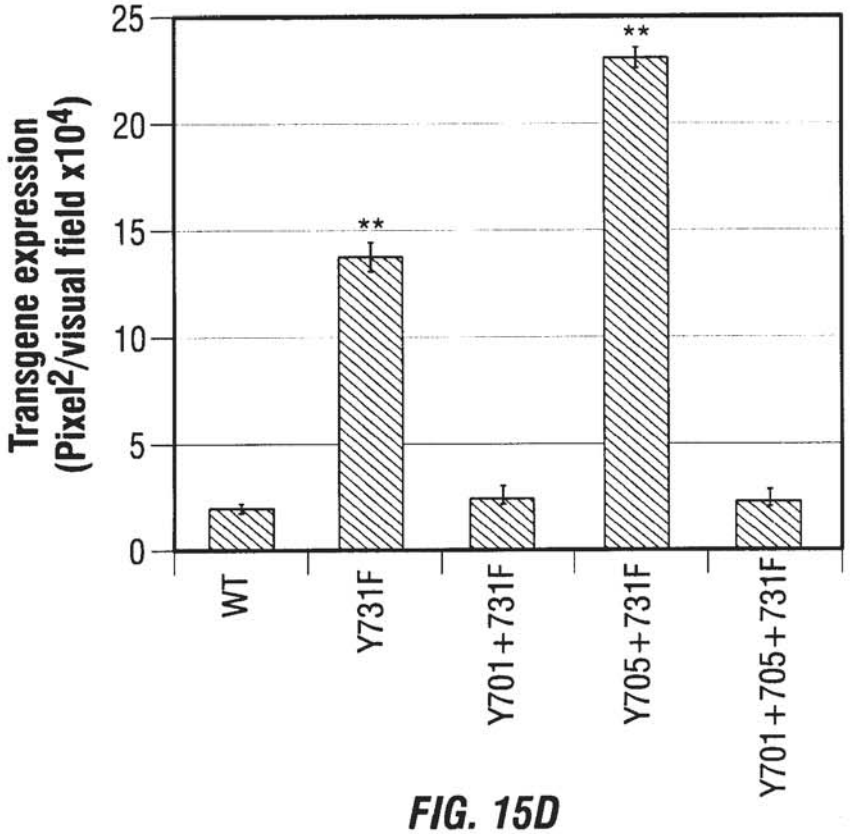


FIG. 15D

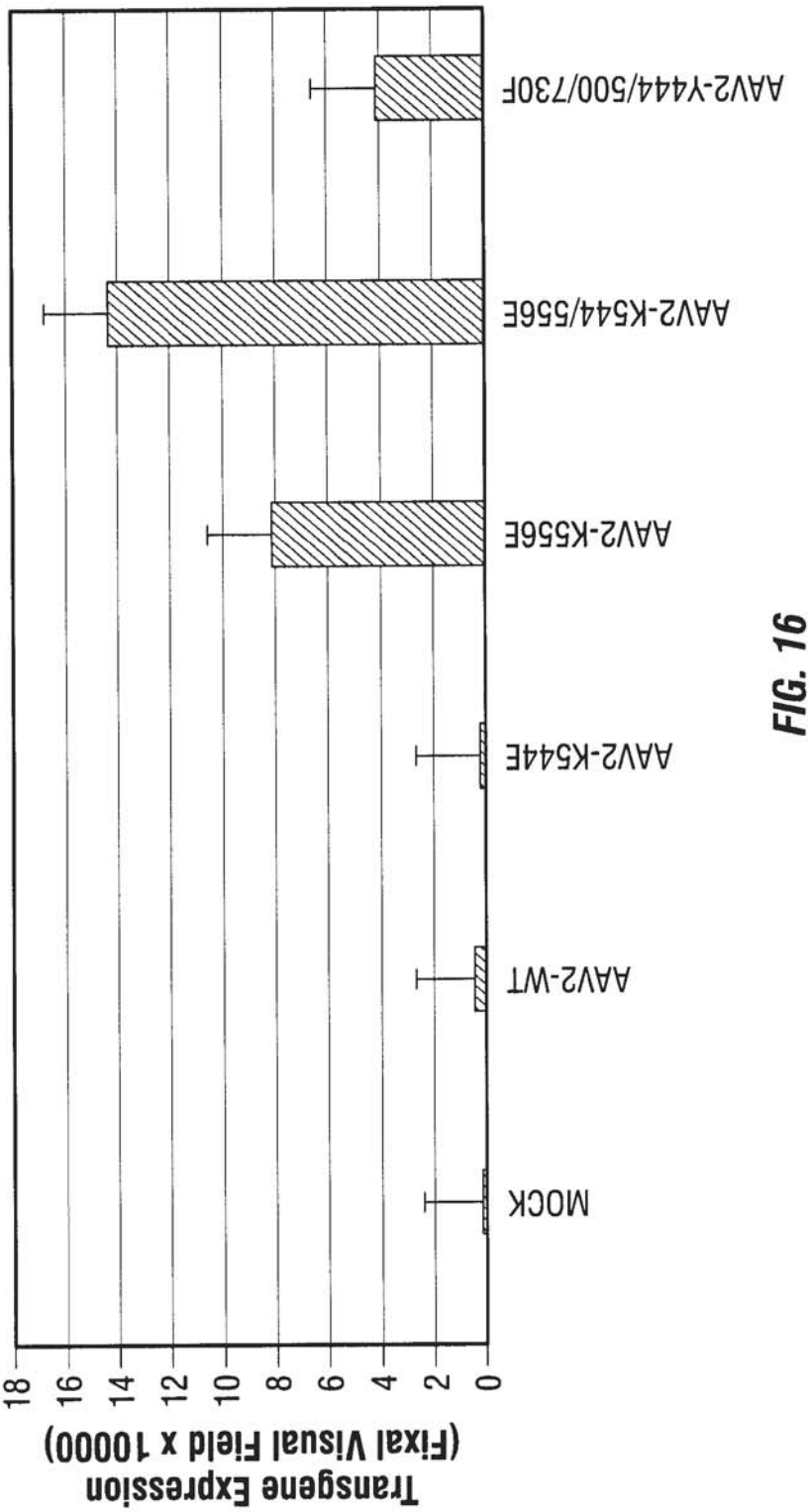

Transgene Expression
(Fixal Visual Field x 10000)
0
2
4
6
8
10
12
14
16
18
MOCK
AAV2-WT
AAV2-K544E
AAV2-K556E
AAV2-K544/556E
AAV2-Y444/500/730F

FIG. 16

MOCK

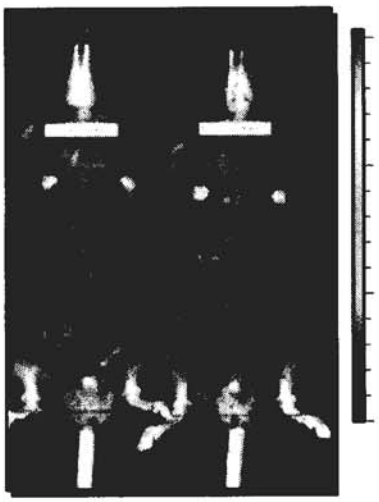


FIG. 17A

WT-AAV8



FIG. 17B

K530E-AAV8



FIG. 17C

K547E-AAV8



FIG. 17D

K569-AAV8E



FIG. 17E

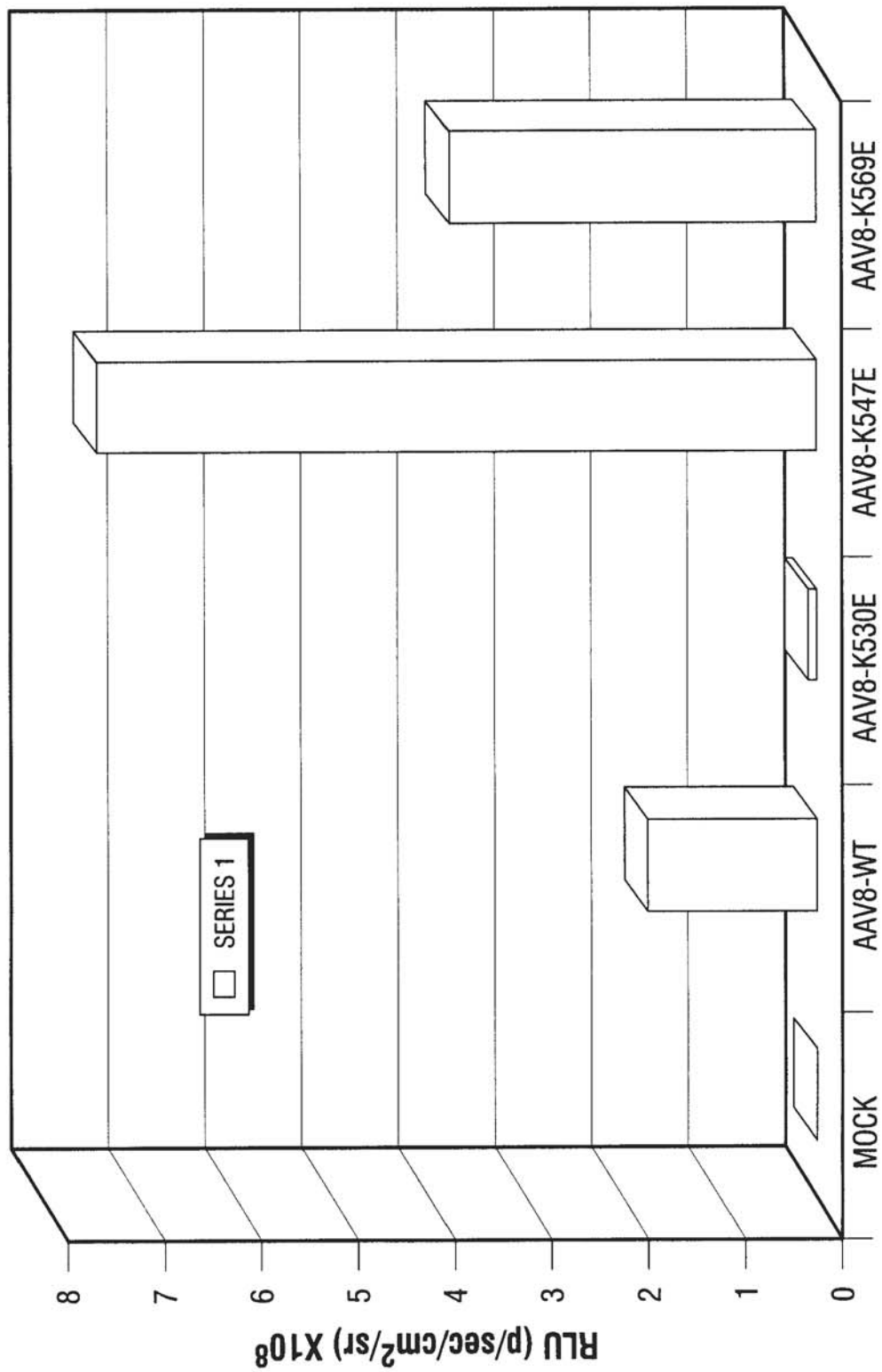

RLU (p/sec/cm2/sr) X10^8
0
1
2
3
4
5
6
7
8
MOCK
AAV8-WT
AAV8-K530E
AAV8-K547E
AAV8-K569E
SERIES 1

FIG. 18

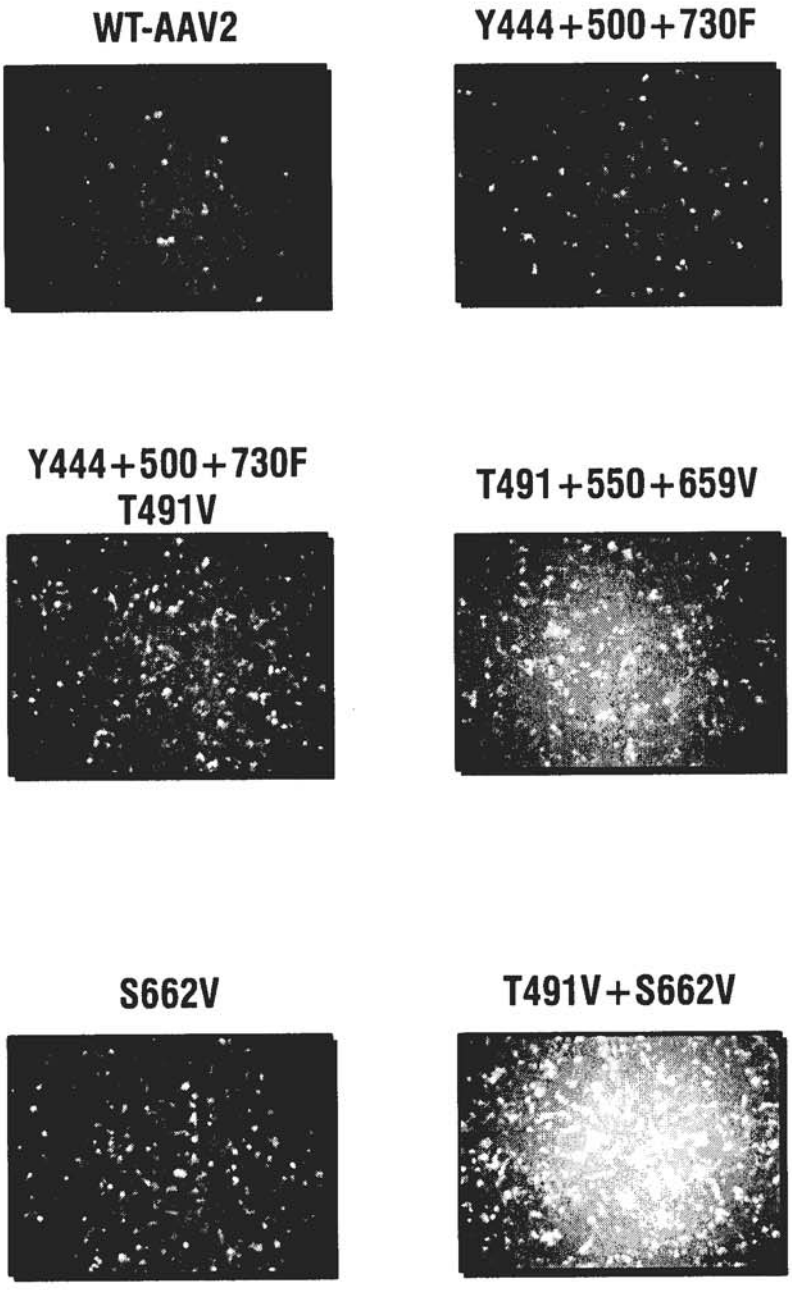

WT-AAV2
Y444+500+730F
Y444+500+730F
T491V
T491+550+659V
S662V
T491V+S662V

FIG. 19A

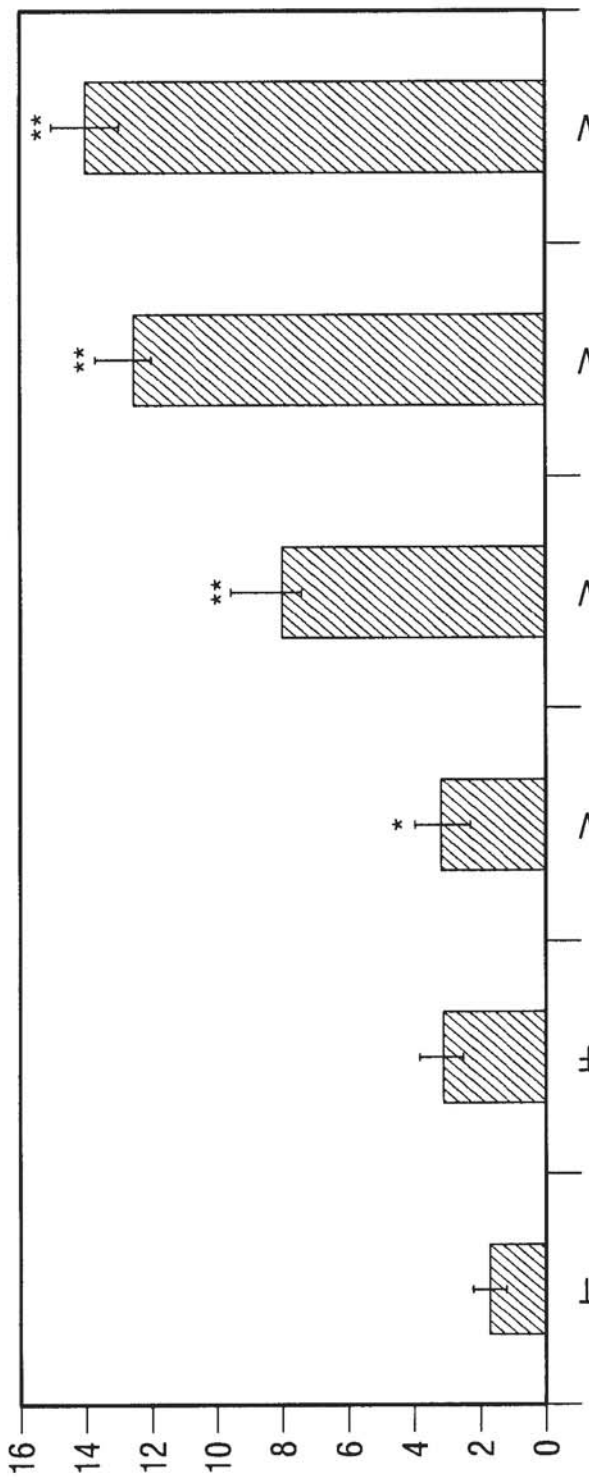

16
14
12
10
8
6
4
2
0
WT
Y444+500+730F
Y444+500+730F+T491V
S662V
T455+491+659V
T491V+S662V
*
**
**
**

FIG. 19B

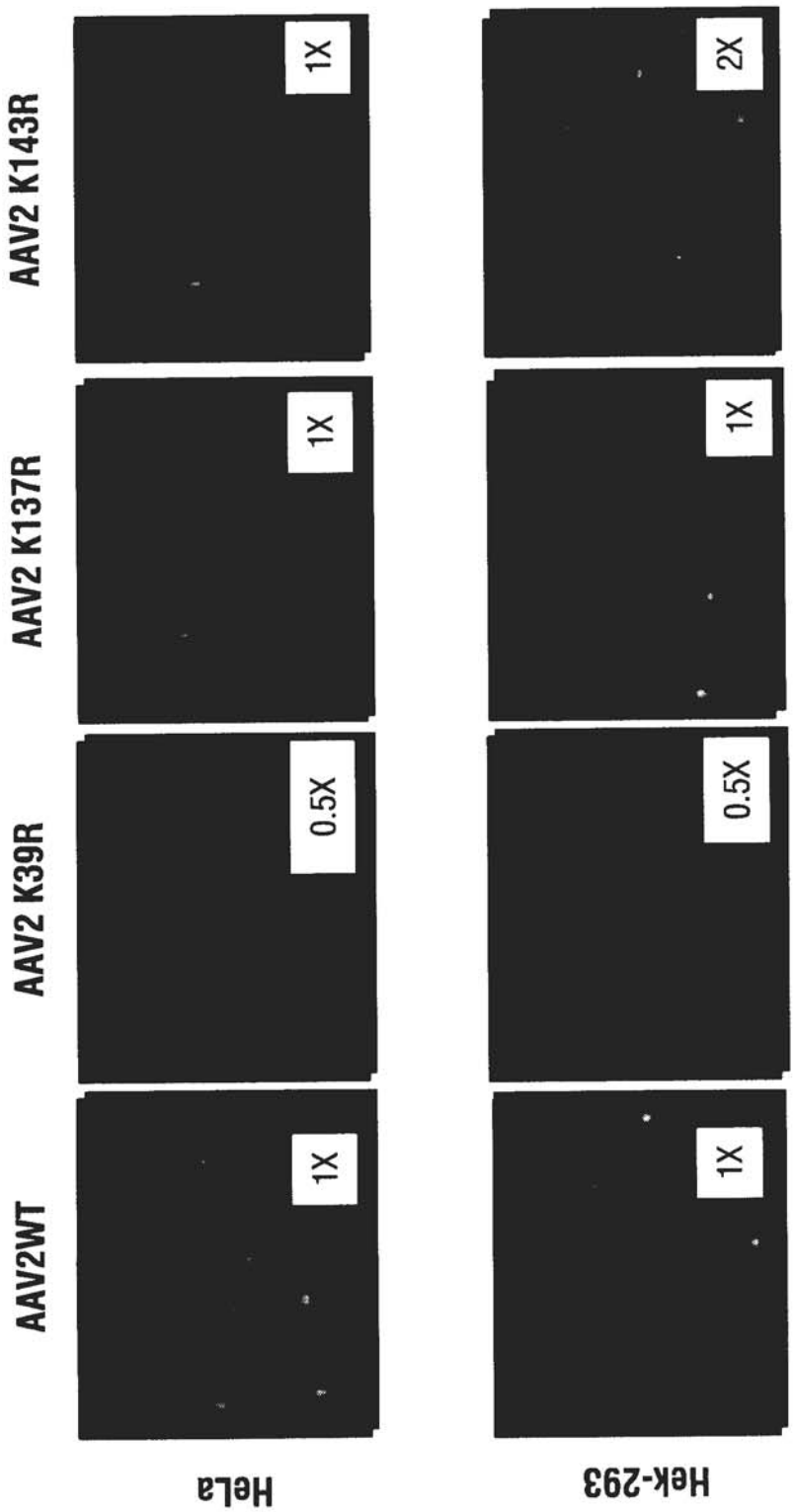

AAV2WT
AAV2 K39R
AAV2 K137R
AAV2 K143R
1X
0.5X
1X
1X
HeLa
1X
0.5X
1X
2X
Hek-293

FIG. 20A

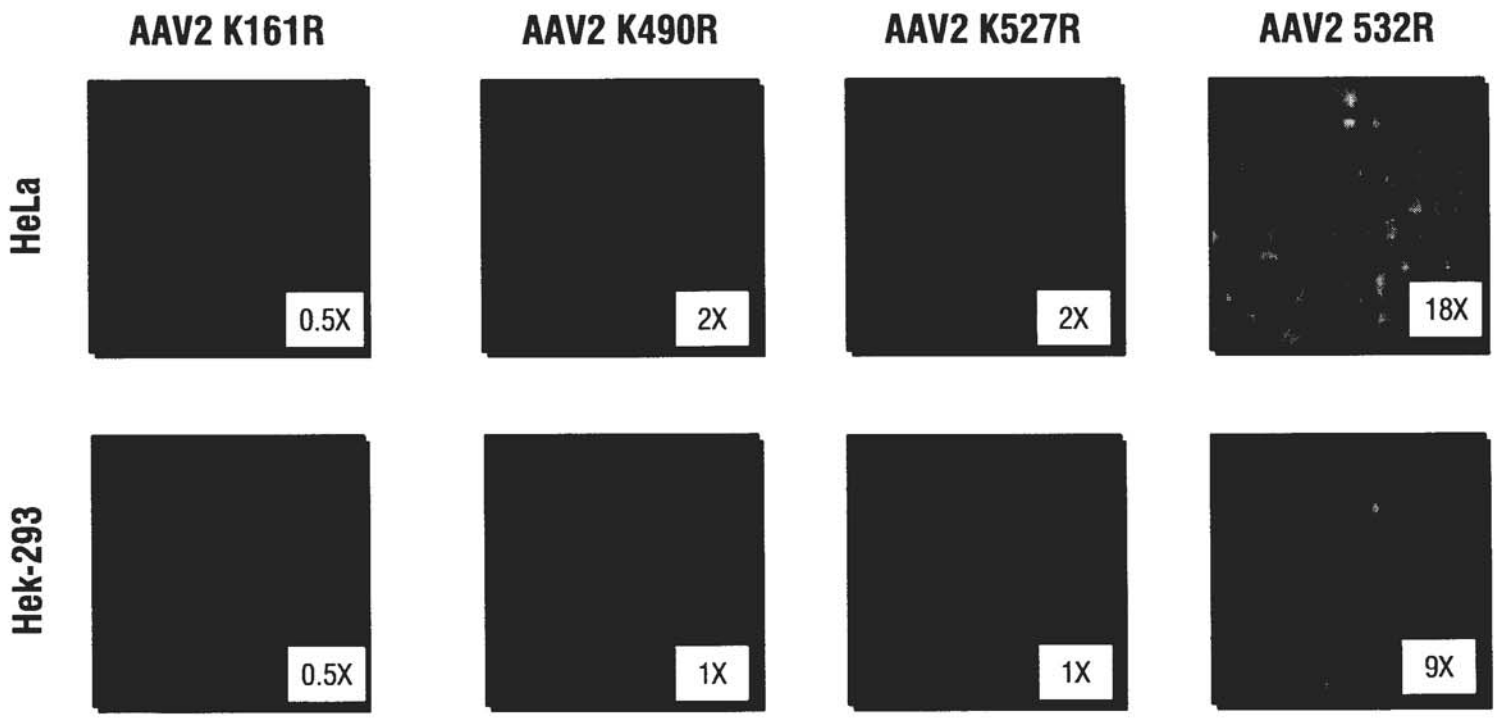

AAV2 K161R
AAV2 K490R
AAV2 K527R
AAV2 532R
HeLa
Hek-293
0.5X
2X
2X
18X
0.5X
1X
1X
9X

FIG. 20B

MOCK



FIG. 21A

WT



FIG. 21B

K258E



FIG. 21C

K490E

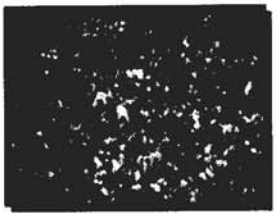


FIG. 21D

K527E



FIG. 21E

K532E



FIG. 21F

K544E

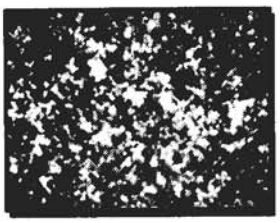


FIG. 21G

K549E

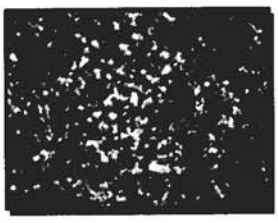


FIG. 21H

K556E

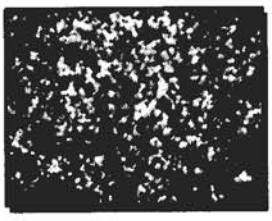


FIG. 21I

MOCK



FIG. 22A

WT



FIG. 22B

K258E



FIG. 22C

K490E

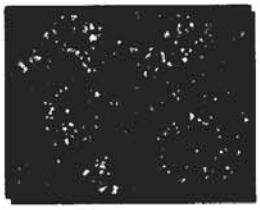


FIG. 22D

K527E

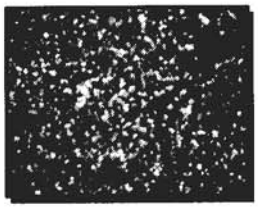


FIG. 22E

K532E



FIG. 22F

K544E

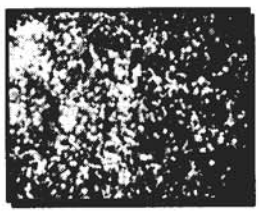


FIG. 22G

K549E

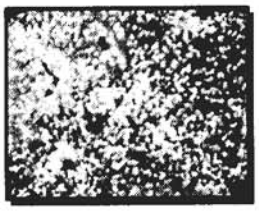


FIG. 22H

K556E

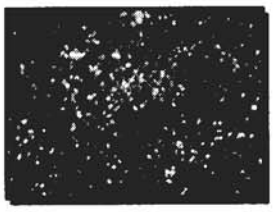


FIG. 22I

MOCK

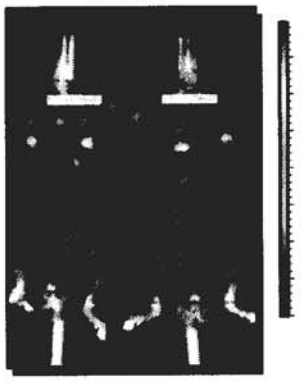


FIG. 23A

WT-AAV2

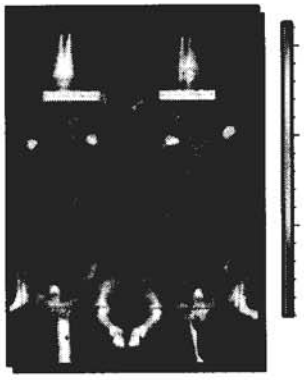


FIG. 23B

K544E-AAV2

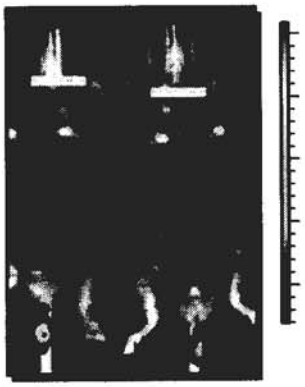


FIG. 23C

K-556E-AAV2

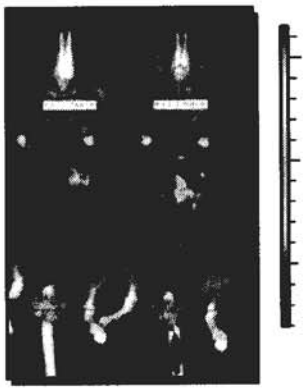


FIG. 23D

K544+556E-AAV2

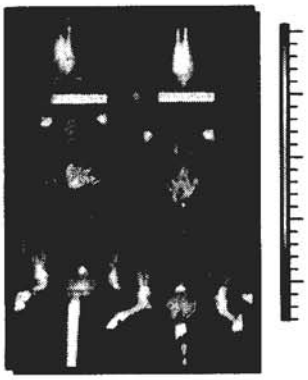


FIG. 23E

Y730+500+444F-AAV2

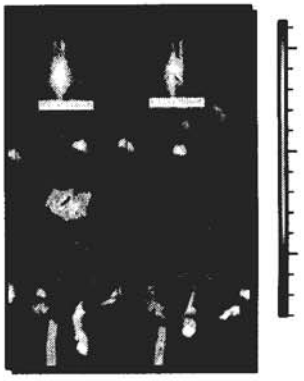


FIG. 23F

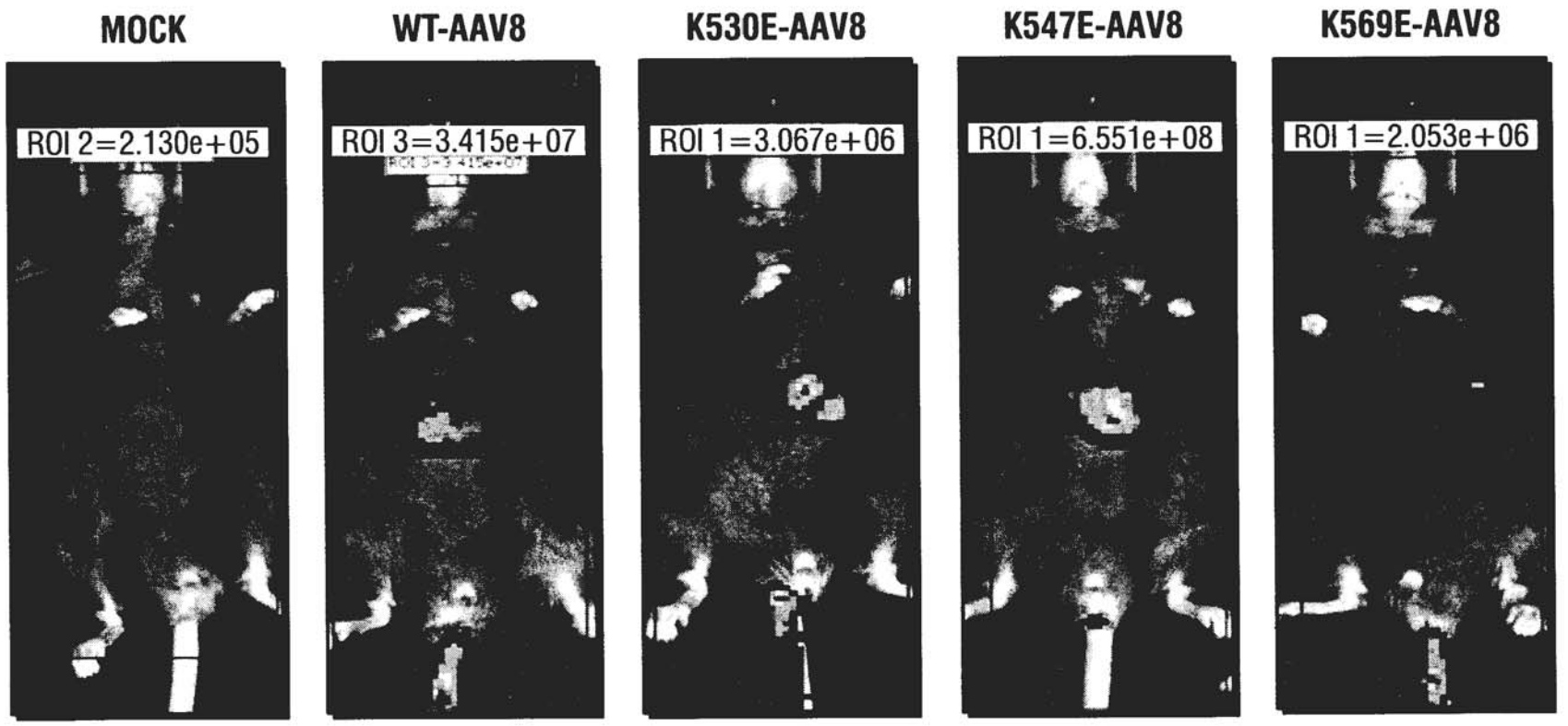

MOCK
WT-AAV8
K530E-AAV8
K547E-AAV8
K569E-AAV8
ROI 2=2.130e+05
ROI 3=3.415e+07
ROI 1=3.067e+06
ROI 1=6.551e+08
ROI 1=2.053e+06

FIG. 24

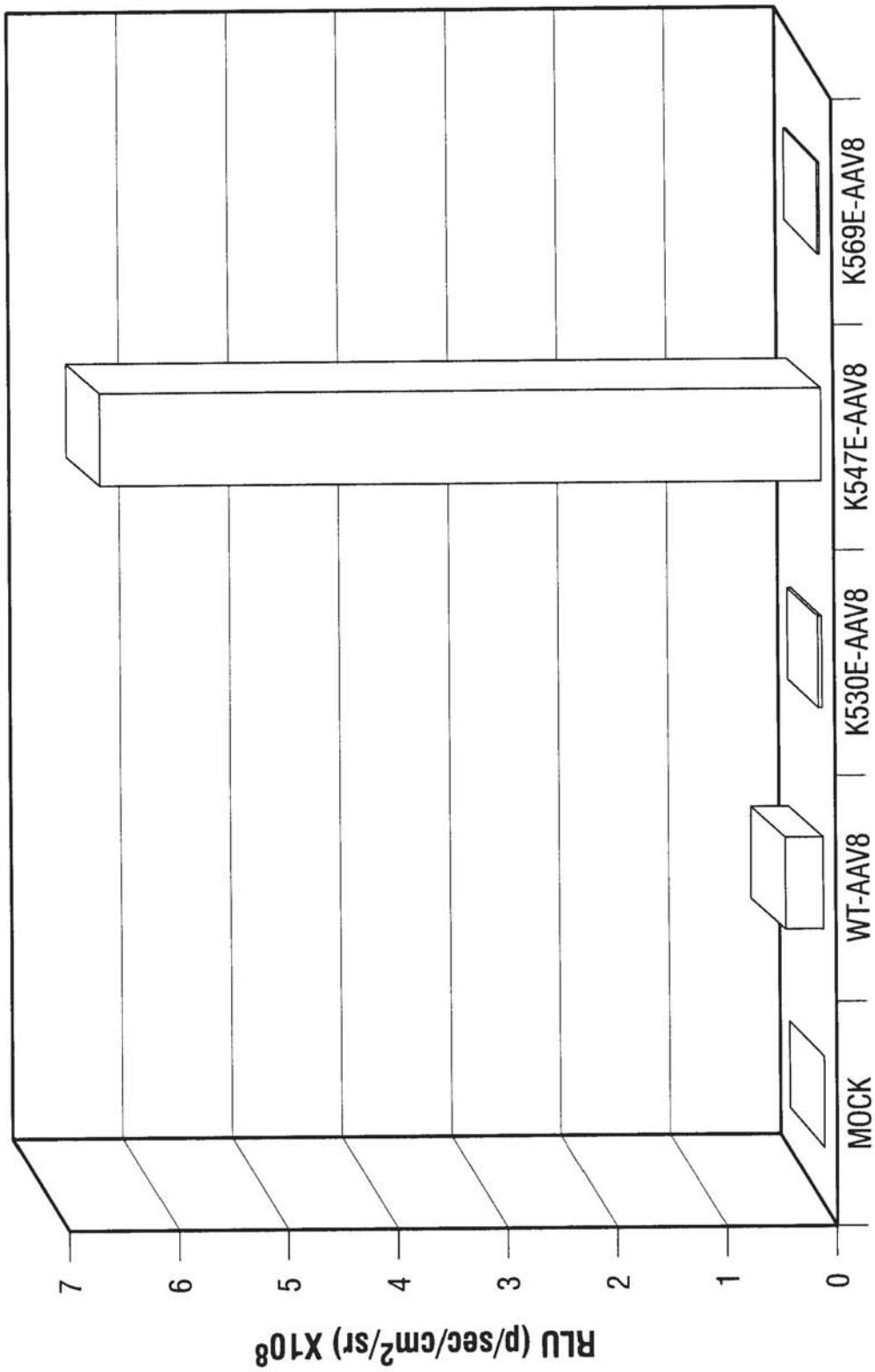

RLU (p/sec/cm2/sr) X10^8
0
1
2
3
4
5
6
7
MOCK
WT-AAV8
K530E-AAV8
K547E-AAV8
K569E-AAV8

FIG. 25