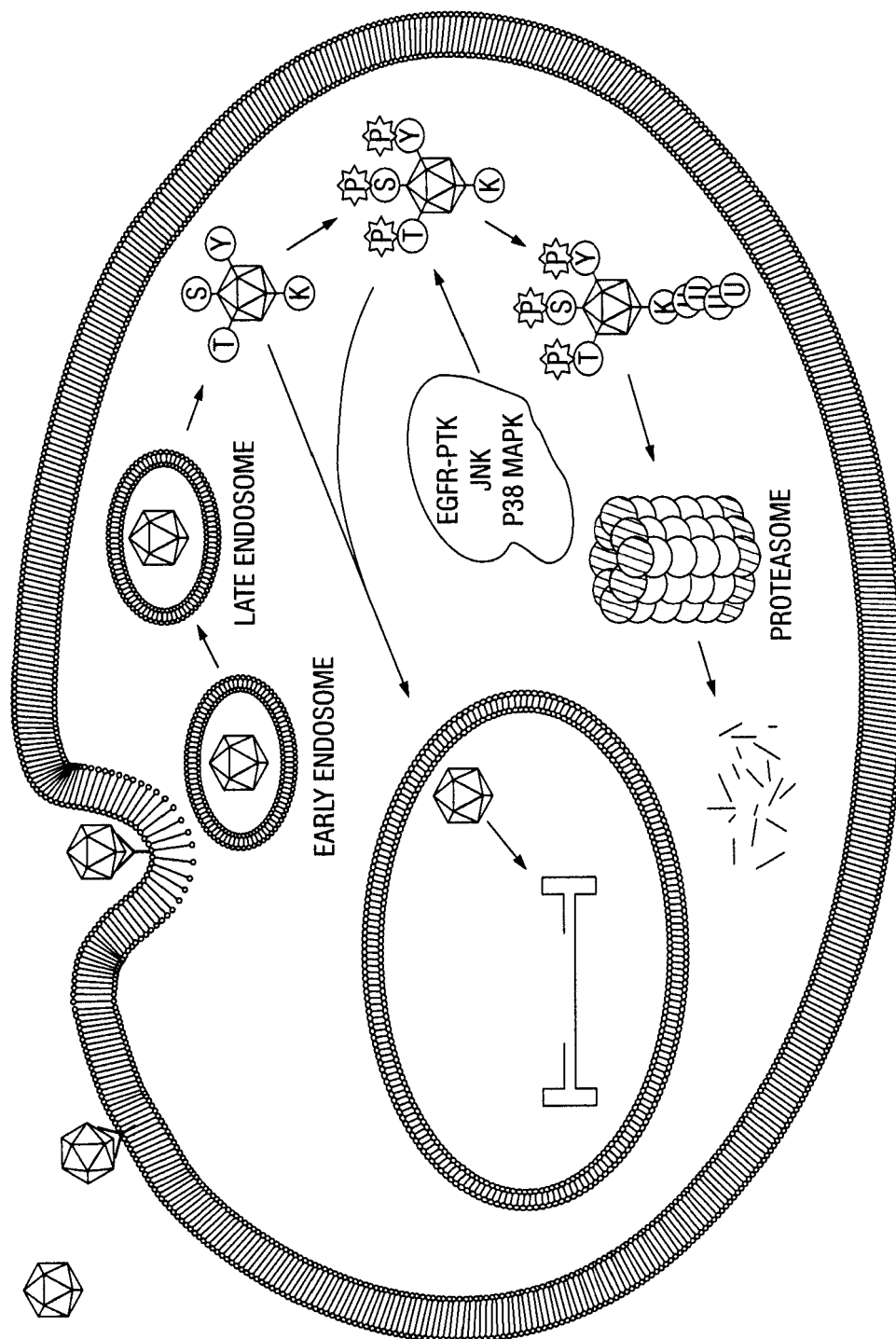


1/47

**FIG. 1**

2/47

CAPSID		SEQUENCE	
	1		100
AAV1	(1)	MAADGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV2	(1)	MAADGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNEADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV3	(1)	MAADGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNEADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV4	(1)	-MTDGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNEADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV5	(1)	MSFVDHPPDWLEEVG-EGLEFLGLEAGPPKPNQHQDQARGLVLPYNYLGPFGNLDKGEVPNRADEVAREHDI SYNEQLEAGDNPYLRYNHADAEEF	
AAV6	(1)	MAADGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV7	(1)	MAADGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV8	(1)	MAADGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV9	(1)	MAADGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV10	(1)	MAADGYLPDWLEDNLSEGIREWDLKPGAPKPKANQKQDDGRGLVLPYKYLGPFGNLDKGEVPNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	200
			101
AAV1	(101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE-PDSSSGIGKTGQOPAKKRLNFGQTGDSESVDPQPLGEPATPAAVG	
AAV2	(101)	QERLKEDTSFGGNLGRAVFQAKKRVLEPLGLVEEPVKTA PGKKRPVEHSPVE-PDSSSGTGKAGQOPAKKRLNFGQTGDADSVDPDQPLGQPPAAPSGLG	
AAV3	(101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEAAKTA PGKKGAVDQSPQE-PDSSSGVGSKGQOPAKKRLNFGQTGDSESVDPDQPLGEPAPAPTSLG	
AAV4	(100)	QORLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEQAGETAPGKKRPLIESPQQ-PDSSTGIGKKGQOPAKKRLNFGQTFEDETGA DGP--PEGSTSGAMSDDS	
AAV5	(100)	QEKLADDTSGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPTKRIDHFPKR-----KKARTEEDSKPSTSSDAEAGPSGS-QQLQIPAAQPASSIG	
AAV6	(101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE-PDSSSGIGKTGQOPAKKRLNFGQTGDSESVDPQPLGEPATPAAVG	
AAV7	(101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRS PDSSSTGIGKKGQOPAKKRLNFGQTGDSESVDPQPLGEPAPAPSSVG	
AAV8	(101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRS PDSSSTGIGKKGQOPAKKRLNFGQTGDSESVDPQPLGEPAPAPSGVG	
AAV9	(101)	QERLKEDTSFGGNLGRAVFQAKKRVLEPLGLVEEAAKTA PGKKRPVEQSPQE-PDSSSAGIGKSGAQOPAKKRLNFGQTGDSESVDPQPLGEPAPAPSGVG	
AAV10	(101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRS PDSSSTGIGKKGQOPAKKRLNFGQTGDSESVDPQPLGEPAPAPSGVG	300
			201
AAV1	(200)	P'TTMA SGGGAPMADNNEGADGVGNA SGNWHCDSTWLGDRVITTTSTRITWALPTYNNHLYKQISSAST-GASNDNHYFGYSTPWGYFDENRFCHFSPRDWQ	
AAV2	(200)	TNTMATGSGAPMADNNEGADGVGNS SGNWHCDSTWMDGRVITTTSTRITWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDENRFCHFSPRDWQ	
AAV3	(200)	SNTMASGGGAPMADNNEGADGVGNS SGNWHCDSQWL GDRVITTTSTRITWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDENRFCHFSPRDWQ	
AAV4	(196)	EMRAAAGGAAVEGG--QGADGVGNA SGNWHCDSTWSEGHVITTTSTRITWVLPYNNHLYKRLGESLQ-----SNTYNGFSTPWGYFDENRFCHFSPRDWQ	
AAV5	(190)	ADTMSAGGGPLGDNNOGADGVGNA SGNWHCDSTWMDGRVITTKSTRITWVLPYNNHLYKQISSAST--VDGSNANAYFGYSTPWGYFDENRFCHFSPRDWQ	
AAV6	(200)	P'TTMA SGGGAPMADNNEGADGVGNA SGNWHCDSTWLGDRVITTTSTRITWALPTYNNHLYKQISSAST-GASNDNHYFGYSTPWGYFDENRFCHFSPRDWQ	
AAV7	(201)	SGTVAAGGGAPMADNNEGADGVGNA SGNWHCDSTWLGDRVITTTSTRITWALPTYNNHLYKQISSSETAG-STNDNTYFGYSTPWGYFDENRFCHFSPRDWQ	
AAV8	(201)	PNTMAAGGGAPMADNNEGADGVGSS SGNWHCDSTWLGDRVITTTSTRITWALPTYNNHLYKQISNGTSGGATNDNTYFGYSTPWGYFDENRFCHFSPRDWQ	
AAV9	(200)	SLTMA SGGGAPVADNNEGADGVGSS SGNWHCDSQWL GDRVITTTSTRITWALPTYNNHLYKQISNSTSGGS SGNNDNAYFGYSTPWGYFDENRFCHFSPRDWQ	
AAV10	(201)	SGTMAAGGGAPMADNNEGADGVGSS SGNWHCDSTWLGDRVITTTSTRITWALPTYNNHLYKQISNGTSGGSTNDNTYFGYSTPWGYFDENRFCHFSPRDWQ	

FIG. 2A-1

3/47

301
AAV1 (299) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFSDEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC 400
AAV2 (298) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC
AAV3 (298) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC
AAV4 (289) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC
AAV5 (289) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC
AAV6 (299) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFSDEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC
AAV7 (300) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFSDEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC
AAV8 (301) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC
AAV9 (300) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC
AAV10 (301) RLINNNGFRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTLNNGSQA---VGRSSFFC 500
401
AAV1 (396) LEYFPSQMLRTGNNFTFSYTFEEVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQ--NQSGSAQNKDLLFSRGSAGMSVQPKNWLPGPCYRQQRVSKTKT
AAV2 (395) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLSRTN--TPSGTTQSRLLQFSQAGASDIRDQSRNWLPGPCYRQQRVSKTSA
AAV3 (395) LEYFPSQMLRTGNNFQFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQGTSGTNSRLLFSAQGPSMSLQARNWLPGPCYRQQRVSKTAN
AAV4 (389) LEYFPSQMLRTGNNFEITYSFEKVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQGTSGTNSRLLFSAQGPSMSLQARNWLPGPCYRQQRVSKTAN
AAV5 (388) LEYFPSQMLRTGNNFEITYSFEKVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQ--NQSGSAQNKDLLFSRGSAGMSVQPKNWLPGPCYRQQRVSKTAN
AAV6 (396) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQ--NQSGSAQNKDLLFSRGSAGMSVQPKNWLPGPCYRQQRVSKTAN
AAV7 (397) LEYFPSQMLRTGNNFEITYSFEKVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQ--NQSGSAQNKDLLFSRGSAGMSVQPKNWLPGPCYRQQRVSKTAN
AAV8 (398) LEYFPSQMLRTGNNFQFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQ--NQSGSAQNKDLLFSRGSAGMSVQPKNWLPGPCYRQQRVSKTAN
AAV9 (397) LEYFPSQMLRTGNNFQFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQ--NQSGSAQNKDLLFSRGSAGMSVQPKNWLPGPCYRQQRVSKTAN
AAV10 (398) LEYFPSQMLRTGNNFEITYSFEKVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRTQ--NQSGSAQNKDLLFSRGSAGMSVQPKNWLPGPCYRQQRVSKTAN 600
501
AAV1 (495) DN-----NNSNFTWTGASKYNLNGRESI INPGTAMASHKDDKDEKFFPMSGVMIFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFFQS
AAV2 (494) DN-----NNSNFTWTGASKYNLNGRESI INPGTAMASHKDDKDEKFFPMSGVMIFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFFQS
AAV3 (495) DN-----NNSNFTWTGASKYNLNGRESI INPGTAMASHKDDKDEKFFPMSGVMIFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFFQS
AAV4 (489) QNYKIPATGSDSLIKYETHSTLDGRWSALITPGPPMATAGPADSKFS--NSQLIFAGPK---QNGNTATVPGTLITFSEEEELAAATATDMDWGNLPGGDQS
AAV5 (481) VN-----PASVSATATTNRMELEGASYQVPPQNGMTNQLGNSNTALENTMI FNSQPANPGTTATYLEGNMLITSESETQPVNRVAYNVGGQMATNNQS
AAV6 (495) DN-----NNSNFTWTGASKYNLNGRESI INPGTAMASHKDDKDEKFFPMSGVMIFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFFQS
AAV7 (497) QN-----NNSNFTWTGASKYNLNGRESI INPGTAMASHKDDKDEKFFPMSGVMIFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFFQS
AAV8 (497) QN-----NNSNFTWTGASKYNLNGRESI INPGTAMASHKDDKDEKFFPMSGVMIFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFFQS
AAV9 (495) QN-----NNSNFTWTGASKYNLNGRESI INPGTAMASHKDDKDEKFFPMSGVMIFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFFQS
AAV10 (497) QN-----NNSNFTWTGASKYNLNGRESI INPGTAMASHKDDKDEKFFPMSGVMIFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFFQS

FIG. 2A-2

601
AAV1 (587) SSTDPATGVDVHAMGALPGMVWQDRDVLQGPWAKIPHTDGHFHPSPLMGGFGLKNPPPPQILIKNTVPANPPAEFSATKFASFITQYSTGQVSVEIEWE 700
AAV2 (586) GNRQAATADVNTQGVLPGMVWQDRDVLQGPWAKIPHTDGHFHPSPLMGGFGLKHPPPPQILIKNTVPANPSTTFSAAKFASFITQYSTGQVSVEIEWE
AAV3 (587) SNTAPTTGTNVHQGALPGMVWQDRDVLQGPWAKIPHTDGHFHPSPLMGGFGLKHPPPPQIMIKNTVPANPPTTFSAPKFAFITQYSTGQVSVEIEWE
AAV4 (585) NSNLTVDRLTALGAVPGMVWQNRDIYYQGPWAKIPHTDGHFHPSPLLGGFGLKHPPPPQIFIKNTVPANPATTFSSTPVNSFITQYSTGQVSQIDWE
AAV5 (576) STTAPATGTYNLQEIIVPGSVWMERDVLQGPWAKIPETGAHFHPSPAMGGFGLKHPPPPQMLIKNTVPGN-ITSFSDVPVSSFITQYSTGQVTVEMEWE
AAV6 (587) SSTDPATGVDVHMVGMALPGMVWQDRDVLQGPWAKIPHTDGHFHPSPLMGGFGLKHPPPPQILIKNTVPANPPAEFSATKFASFITQYSTGQVSVEIEWE
AAV7 (588) ANTAAQTQVVNNQGALPGMVWQNRDVLQGPWAKIPHTDGNFHPSPLMGGFGLKHPPPPQILIKNTVPANPPEVFTPAKFASFITQYSTGQVSVEIEWE
AAV8 (589) QNTAPQIGTVNSQGALPGMVWQNRDVLQGPWAKIPHTDGNFHPSPLMGGFGLKHPPPPQILIKNTVPADPPTTFNQSKLNSFITQYSTGQVSVEIEWE
AAV9 (587) AQAQAQTGWVQNQGILPGMVWQDRDVLQGPWAKIPHTDGNFHPSPLMGGFGLKHPPPPQILIKNTVPADPPTAFNKKDKLNSFITQYSTGQVSVEIEWE
AAV10 (589) QNAAPIVGAVNSQGALPGMVWQNRDVLQGPWAKIPHTDGNFHPSPLMGGFGLKHPPPPQILIKNTVPADPPTTFSQAKLASFITQYSTGQVSVEIEWE 751
701
AAV1 (687) LQKNSKRWNPEVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL-SEQ ID NO:1
AAV2 (686) LQKNSKRWNPEIQYTSNYKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL-SEQ ID NO:2
AAV3 (687) LQKNSKRWNPEIQYTSNYKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL-SEQ ID NO:3
AAV4 (685) IQKNSKRWNPEVQFTSNYGOQNSLLWAPDAAGKYTEPRAIGTRYLTHHL-SEQ ID NO:4
AAV5 (675) LKKNSKRWNPEIQYTNNDPQFVDFAPDSTGEYRTTRPIGTRYLTRPL-SEQ ID NO:5
AAV6 (687) LQKNSKRWNPEVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL-SEQ ID NO:6
AAV7 (688) LQKNSKRWNPEIQYTSNFEKQGTGVDFAVDSQGVYSEPRPIGTRYLTRNL-SEQ ID NO:7
AAV8 (689) LQKNSKRWNPEIQYTSNYKSTSVDFAVNTEGVYSEPRPIGTRYLTRNL-SEQ ID NO:8
AAV9 (687) LQKNSKRWNPEIQYTSNYKSNVVEFAVNTGVYSEPRPIGTRYLTRNL-SEQ ID NO:9
AAV10 (689) LQKNSKRWNPEIQYTSNYKSTNVDFAVNTDGTSEPRPIGTRYLTRNL-SEQ ID NO:10

FIG. 2A-3

5/47

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

[illegible]

FIG. 2B-2

[illegible]

FIG. 2B-3

8/47

CAPSID	SEQUENCE	
AAV1 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	100
AAV2 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	
AAV3 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	
AAV4 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	
AAV5 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	
AAV6 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	
AAV7 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	
AAV8 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	
AAV9 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	
AAV10 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPGAPKPKANQQKDDGRGLVLPGYKYLGPFGNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADA	200
AAV1 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	
AAV3 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	
AAV4 (100)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	
AAV5 (100)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	
AAV6 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	
AAV7 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	
AAV8 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	
AAV9 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	
AAV10 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE--PDSSSGIGKGTGQOPAKKRLNFGQTDSESVDPQPLGEPPTAAV	300
AAV1 (200)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV2 (200)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV3 (200)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV4 (196)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV5 (190)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV6 (200)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV7 (201)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV8 (201)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV9 (200)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	
AAV10 (201)	PTTMASGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNHLYKQISSAST--GASNDNHLYFGYSTPWGYFDENRFHCHFS	

FIG. 2C-1

9/47

301
 AAV1 (299) RLINNNWGFPRKRLNFKLFNIQVKEVTTNDGVTTIANNLSTVQVFSDEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTILNNGSQA---VGRSSFFYC 400
 AAV2 (298) RLINNNWGFPRKRLNFKLFNIQVKEVTQNDGTTTIANNLSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTILNNGSQA---VGRSSFFYC
 AAV3 (298) RLINNNWGFPRKRLNFKLFNIQVKEVTQNDGTTTIANNLSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTILNNGSQA---VGRSSFFYC
 AAV4 (289) RLINNNWGFPRKRLNFKLFNIQVKEVTTSGETTIVANLSTVQIFADSSVELPYVMDAQEGSLPPFPNDVFMIPQYGYCGLVTGNTSQQTDRNAFYC
 AAV5 (289) RLINNNWGFPRKRLNFKLFNIQVKEVTVDSTTTIANNLSTVQVFTDDYQLPYVVGNGTEGCLPAFPQVFTLIPQYGYATLNRDNTEN-PTERSFFFC
 AAV6 (299) RLINNNWGFPRKRLNFKLFNIQVKEVTTNDGVTTIANNLSTVQVFSDEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTILNNGSQA---VGRSSFFYC
 AAV7 (300) RLINNNWGFPRKRLNFKLFNIQVKEVTTNDGVTTIANNLSTVQVFSDEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTILNNGSQA---VGRSSFFYC
 AAV8 (301) RLINNNWGFPRKRLNFKLFNIQVKEVTQNEGKTIANNLSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTILNNGSQA---VGRSSFFYC
 AAV9 (300) RLINNNWGFPRKRLNFKLFNIQVKEVTDNNGVKTIANNLSTVQVFTDSDYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTILNNGSQA---VGRSSFFYC
 AAV10 (301) RLINNNWGFPRKRLNFKLFNIQVKEVTQNEGKTIANNLSTVQVFTDSEYQLPYVLGSAHQGCLPPFPADVFMIPQYGYLTILNNGSQA---VGRSSFFYC 500
 401
 AAV1 (396) LEYFPSQMLRTGNNFTFSYTFEEVPFHSSYAHSQSLDRIMNPLIDQYLYLNRTO-NQSGSAQNKDILFSGSPAGMSVQPKNWLPGPCYRQQRVSKTKT
 AAV2 (395) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHSQSLDRIMNPLIDQYLYLNRTO-TPSGTTTQSRLLQFSQAGASDIRDQSRNWLPGPCYRQQRVSKTSA
 AAV3 (395) LEYFPSQMLRTGNNFQFSYTFEDVPFHSSYAHSQSLDRIMNPLIDQYLYLNRTOGTTTSGTTNQSRLLFSQAGPQSMISLQARNWLPGPCYRQQRVSKTAN
 AAV4 (389) LEYFPSQMLRTGNNFEITYSEKVPFHSSYAHSQSLDRIMNPLIDQYLGWLOSTTTGTTILNAGTATNFTKLPRTNFSNFKKNWLPGPSIKQOQFSTAN
 AAV5 (388) LEYFPSQMLRTGNNFEITYNFEVFPFHSSYAHSQSLDRIMNPLIDQYLYLNRTO-NQSGVQFNKNLAGRYANTYKNWFPGPMGRTOQGNLGS
 AAV6 (396) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHSQSLDRIMNPLIDQYLYLNRTO-NQSGSAQNKDILFSGSPAGMSVQPKNWLPGPCYRQQRVSKTKT
 AAV7 (397) LEYFPSQMLRTGNNFEFSYTFEDVPFHSSYAHSQSLDRIMNPLIDQYLYLARTQSNPGGTAGNRELQFYQGGPSTMAEQAKNWLPGPCYRQQRVSKTLD
 AAV8 (398) LEYFPSQMLRTGNNFQFTYTFEDVPFHSSYAHSQSLDRIMNPLIDQYLYLNRTOGTTTGGTANTQTLGFSQGGPNTMANQAKNWLPGPCYRQQRVSTTTG
 AAV9 (397) LEYFPSQMLRTGNNFQFSYEFENVPFHSSYAHSQSLDRIMNPLIDQYLYLSKTING--SGQNQOTLKFVAGPSNMAVQGRNYIPGPSYRQQRVSTTVT
 AAV10 (398) LEYFPSQMLRTGNNFEFSYQFEDVPFHSSYAHSQSLDRIMNPLIDQYLYLSRTQST--GGTAGTQQLLFSQAGPNMMSAQAKNWLPGPCYRQQRVSTTLS 600
 501
 AAV1 (495) DN-----NNSNFTWTGASKYNLNGRESIINPGTAMASHKDDKEDKFFPMSGVMIFGKE---SAGASNTALDNVMTTDEEEIKATNPVATERFGTVAVNFQS
 AAV2 (494) DN-----NNSSEYSWTGATKYHNLGRDLSLVNPGPAMASHKDDKEDKFFPQSGVLIFGKQ---GSEKTNVDIEKVMITDEEEIRTTNPVATEQYGSVSTNLQR
 AAV3 (495) DN-----NNSNFPWTAASKYHNLGRDLSLVNPGPAMASHKDDKEDKFFPMSGVLIIFGKE---GTTASNAELDNVMTTDEEEIRTTNPVATEQYGTAVANNLQS
 AAV4 (489) QNYKIPATGSDSLIKYETHSTLDGRWSALTGPPMATAGPADSKFS-NSQLIFAGPK---QNGNTATVPGLIFTSEEEELAAATNATDMDWGNLPGGDQS
 AAV5 (481) VN-----RASVSATATNRMELGASYQVPPQPNMGMTNNLQSGNTYALENTMIFNSQPANPGTATYLEGNMLITSESETQPNRVAYNVGGOMATNNQS
 AAV6 (495) DN-----NNSNFTWTGASKYNLNGRESIINPGTAMASHKDDKEDKFFPMSGVMIFGKE---SAGASNTALDNVMTTDEEEIKATNPVATERFGTVAVNLQS
 AAV7 (497) QN-----NNSNFAWTGATKYHNLGRDLSLVNPGVAMATHKDDKEDKFFPSSGVLIFGKT---GATNKTILENVLMTNEEEIRTPNPVATEEYGISSNLQA
 AAV9 (495) QN-----NNSNFAWTGATKYHNLGRDLSLVNPGVAMATHKDDKEDKFFPSSGVLIFGKQ---NAARDNADYSVMLTSEEEIKATNPVATEEYGISSNLQA
 AAV10 (497) QN-----NNSNFAWTGATKYHNLGRDLSLVNPGVAMATHKDDKEDKFFPSSGVLIFGKQ---GTGRDNVDADKVMITNEEEIKATNPVATESYGVQVATNHQS
 QN-----NNSNFAWTGATKYHNLGRDLSLVNPGVAMATHKDDKEDKFFPSSGVLIFGKQ---GACKDNVDYSSVMTTSEEEIKATNPVATESYGVQVADNLQO

FIG. 2C-2

10/47

601
AAV1 (587) SSTDPATGADVHAMGALPGMWQDRDVLQGPWAKIPHTDGHFHPSPIMGFGLKNPPQILIKNTVPANPPAEFSATKFASFITQYSTGQVSVEIEWE
AAV2 (586) GNRQAATADVNTQGVLPGMWQDRDVLQGPWAKIPHTDGHFHPSPIMGFGLKHPPQILIKNTVPANPSTTFSAAKFASFITQYSTGQVSVEIEWE
AAV3 (587) SNTAPTGTGNHQGALPGMWQDRDVLQGPWAKIPHTDGHFHPSPIMGFGLKHPPQIMIKNTVPANPPTTFSAPAKFASFITQYSTGQVSVEIEWE
AAV4 (585) NSNLPITVDRLTALGAVPGMWQNRDIYYQGPWAKIPHTDGHFHPSPILGEGFGLKHPPQIFIKNTVPANPATTSSTPVNSFITQYSTGQVSQIDWE
AAV5 (576) STTAPATGTYNLQEIIVPGSVMMERDVLQGPWAKIPETGAHFHPSPAMGGFGLKHPPQMLIKNTVPGN-ITSFSDVPVSSFITQYSTGQVTVEIEWE
AAV6 (587) SSTDPATGADVHMALPGMWQDRDVLQGPWAKIPHTDGHFHPSPIMGFGLKHPPQILIKNTVPANPPAEFSATKFASFITQYSTGQVSVEIEWE
AAV7 (588) ANTAQTQVNNQGALPGMWQNRDVLQGPWAKIPHTDGHFHPSPIMGFGLKHPPQILIKNTVPANPPEVFTPAKFASFITQYSTGQVSVEIEWE
AAV8 (589) QNTAPQIGTVNSQGALPGMWQNRDVLQGPWAKIPHTDGNFHPSPIMGFGLKHPPQILIKNTVPADPPTTFNQSKLNSFITQYSTGQVSVEIEWE
AAV9 (587) AQAQQTGWVQNGILPGMWQDRDVLQGPWAKIPHTDGNFHPSPIMGFGLKHPPQILIKNTVPADPPTAFNKKLNSFITQYSTGQVSVEIEWE
AAV10 (589) QNAAPIVGAVNSQGALPGMWQNRDVLQGPWAKIPHTDGNFHPSPIMGFGLKHPPQILIKNTVPADPPTTFSQAKLASFITQYSTGQVSVEIEWE
701
AAV1 (687) LQENSKRWNPVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL- SEQ ID NO: 1
AAV2 (686) LQENSKRWNPVQYTSNYAKSANVDFTVDTNGVYSEPRPIGTRYLTRNL- SEQ ID NO: 2
AAV3 (687) LQENSKRWNPVQYTSNYAKSANVDFTVDTNGVYSEPRPIGTRYLTRNL- SEQ ID NO: 3
AAV4 (685) IQKERSKRWNPVQYTSNYGQQNSLLWAPDAAGKYTEPRAIGTRYLTHHL- SEQ ID NO: 4
AAV5 (675) LKKENSKRWNPVQYTSNYAKSANVDFTVDFAPDSTGEYRTTRPIGTRYLTRPL- SEQ ID NO: 5
AAV6 (687) LQENSKRWNPVQYTSNYAKSANVDFTVDNNGLYTEPRPIGTRYLTRPL- SEQ ID NO: 6
AAV7 (688) LQENSKRWNPVQYTSNFEKQTVDFAVDSQGVYSEPRPIGTRYLTRNL- SEQ ID NO: 7
AAV8 (689) LQENSKRWNPVQYTSNYKSTSVDFAVNTEGVYSEPRPIGTRYLTRNL- SEQ ID NO: 8
AAV9 (687) LQENSKRWNPVQYTSNYKSNVVEFAVNTGVYSEPRPIGTRYLTRNL- SEQ ID NO: 9
AAV10 (689) LQENSKRWNPVQYTSNYKSTNVDFAVNTDGTSEPRPIGTRYLTRNL- SEQ ID NO: 10

FIG. 2C-3

CAPSID	SEQUENCE	
1		100
AAV1 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPAPKPKANQQKQDDGRGLVLPGYKYLGFNFGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV2 (1)	MAADGYLPDWLEDTLSEGIQWKKLKPQPPPKPAERHKDDSRGLVLPGYKYLGFNFGLDKGEPVNEADAAALEHDKAYDRQLDSDGNPYLYKNHADAEEF	
AAV3 (1)	MAADGYLPDWLEDNLSEGIREWVALKPGVPQPKANQQHODNRRGLVLPGYKYLGPNGLDKGEPVNEADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV4 (1)	-MTDGYLPDWLEDNLSEGVREWVALQPGAPKPKANQQHODNARGVLPGYKYLGPNGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV5 (1)	MSFVDHPPDWLEEVG-EGREFLGLAAGPPKPKPNQQHQQDARGVLPGVNVLGPNGLDGRGEPVNRADDEVAREHDI SYNEQLEAGDNPYLRYNHADAEEF	
AAV6 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPAPKPKANQQKQDDGRGLVLPGYKYLGFNFGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV7 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPAPKPKANQQKQDDGRGLVLPGYKYLGFNFGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV8 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPAPKPKANQQKQDDGRGLVLPGYKYLGFNFGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV9 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPAPKPKANQQKQDDGRGLVLPGYKYLGFNFGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
AAV10 (1)	MAADGYLPDWLEDNLSEGIREWWDLKPAPKPKANQQKQDDGRGLVLPGYKYLGFNFGLDKGEPVNAADAAALEHDKAYDQQLKAGDNPYLRYNHADAEEF	
		101
AAV1 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE-PDSSSGIGKGTGQOPAKKRLNFGQTGDSSEVPDPQPLGEPPTAAVVG	
AAV3 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEPVKTA PGKKRPVEHSPVE-PDSSSGTGKAGQOPAKKRLNFGQTGDADSVDPDPQPLGQPPAAPSGLG	
AAV4 (100)	QERLQEDTSFGGNLGRAVFQAKKRILEPLGLVEEAAKTA PGKKGAVDQSPQE-PDSSSGVGKSGKQOPAKKRLNFGQTGDSSEVPDPQPLGEPPTAAVVG	
AAV5 (100)	QQRLOGDTSFGGNLGRAVFQAKKRVLEPLGLVEAQETA PGKKRPLIESPQQ-PDSSTGIGKKGKQOPAKKRLNFGQTFEDETGAGDGP---PEGSTSGAMSDDS	
AAV6 (101)	QEKLAADTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPTGRIDHFPKR-----KKA RTEEDSKPSTSSDAEAGPSGS-QQLQIPAPQPASSLG	
AAV7 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEQSPQE-PDSSSGIGKGTGQOPAKKRLNFGQTGDSSEVPDPQPLGEPPTAAVVG	
AAV8 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRS PDSSTGIGKKGQOPAKKRLNFGQTGDSSEVPDPQPLGEPPTAAVVG	
AAV9 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEGAKTAPGKKRPVEPSPQRS PDSSTGIGKKGQOPAKKRLNFGQTGDSSEVPDPQPLGEPPTAAVVG	
AAV10 (101)	QERLQEDTSFGGNLGRAVFQAKKRVLEPLGLVEEAAKTA PGKKRPVEQSPQE-PDSSAGIGKSGAQOPAKKRLNFGQTGDTESVPDPQPIGEPPAAPSGVG	
		201
AAV1 (200)	PTTMAAGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNNHLYKQISSAST-GASNDNHYFGYSTPWGYFDNRFHCHFSPRDWQ	
AAV2 (200)	TNTMATGSGAPMADNNEGADGVGNSSGNWHCDSTWMDRVITTTSTRTWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDNRFHCHFSPRDWQ	
AAV3 (200)	SNMTASGGGAPMADNNEGADGVGNSSGNWHCDSQWLGRVITTTSTRTWALPTYNNHLYKQISSQS--GASNDNHYFGYSTPWGYFDNRFHCHFSPRDWQ	
AAV4 (196)	EMRAAAGGAAVEGG--QGADGVGNASGDWHCDSTWSEGHVTTTSTRTWVLPPTYNNHLYKRLGESLQ-----SNTYNGFSTPWGYFDNRFHCHFSPRDWQ	
AAV5 (190)	ADTMSAGGGPLGDNNOGADGVGNASGDWHCDSTWMDRVITTKSTRTWVLPPTYNNHLYKQISSAST-VDSNANAYFGYSTPWGYFDNRFHSHWSPRDWQ	
AAV6 (200)	PTTMAAGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNNHLYKQISSAST-GASNDNHYFGYSTPWGYFDNRFHCHFSPRDWQ	
AAV7 (201)	SGTVAAAGGGAPMADNNEGADGVGNASGNWHCDSTWLGDRVITTTSTRTWALPTYNNHLYKQISSSETAG-STNDNTYFGYSTPWGYFDNRFHCHFSPRDWQ	
AAV8 (201)	PNTMAAGGGAPMADNNEGADGVGSSSGNWHCDSTWLGDRVITTTSTRTWALPTYNNHLYKQISNGTSGGATNDNTYFGYSTPWGYFDNRFHCHFSPRDWQ	
AAV9 (200)	SLTMAAGGGAPMADNNEGADGVGSSSGNWHCDSQWLGRVITTTSTRTWALPTYNNHLYKQISNSTSGGSNDNAYFGYSTPWGYFDNRFHCHFSPRDWQ	
AAV10 (201)	SGTMAAGGGAPMADNNEGADGVGSSSGNWHCDSTWLGDRVITTTSTRTWALPTYNNHLYKQISNGTSGGSTNDNTYFGYSTPWGYFDNRFHCHFSPRDWQ	

11/47

FIG. 2D-1

301
 AAV1 (299) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFSDEYQQLPYVLGSAHQGCLPPFPADVFMIPOYGYLTLNNGSQA---VGRSSFFYC
 AAV2 (298) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 AAV3 (298) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 AAV4 (289) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 AAV5 (289) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 AAV6 (299) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 AAV7 (300) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 AAV8 (301) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 AAV9 (300) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 AAV10 (301) RLINNWFGRPKRLNFKLFNIQVKEVTNDGVTTIANNLTSTVQVFTDSEYQQLPYVLGSAHQGCLPPFPADVFVMPQYGYLTLNNGSQA---VGRSSFFYC
 401
 AAV1 (396) LEYFPSQMLRTGNNFTFSYTFEEVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-NQSGSAQNKDLLFSRGSPAGMSVQPKNWLPGPCYRQQRVSKTKT
 AAV2 (395) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TPSGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTSA
 AAV3 (395) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTAN
 AAV4 (389) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTAN
 AAV5 (388) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTAN
 AAV6 (396) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTAN
 AAV7 (397) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTAN
 AAV8 (398) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTAN
 AAV9 (397) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTAN
 AAV10 (398) LEYFPSQMLRTGNNFTFSYTFEDVPFHSSYAHQSQSLDRIMNPLIDQYLYLNRQTQ-TGTTTQSRLOFSQAGASDIRDQSRNWLPGPCYRQQRVSKTAN
 501
 AAV1 (495) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 AAV2 (494) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 AAV3 (495) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 AAV4 (489) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 AAV5 (481) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 AAV6 (495) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 AAV7 (497) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 AAV9 (495) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 AAV10 (497) DN-----NNSNFTWTGASKYNLNGRESIIINPGTAMASHKDDKEDKFFPMSGVMIFFGKE---SAGASNTALDNVMTDEEEIKATNPVATERFGTAVNFAQS
 600

12/47

FIG. 2D-2

601 * ◇ ◇ * ◇ ◇ * 700
 AAV1 (587) SSTDPATGDVHAMGALPGMVWQDRDVYLQGPWAKIPHTDGHFHPSPMLGGFGLKKNPPQILIKNTVPANPPAEFSATKFASFITQYSTGQVSVSEIWE
 AAV2 (586) GNRQAATAADVNTQGVLPGMVWQDRDVYLQGPWAKIPHTDGHFHPSPMLGGFGLKHPPPQILIKNTVPANPSTTFSAAKFASFITQYSTGQVSVSEIWE
 AAV3 (587) SNTAPTGTGVNHQGALPGMVWQDRDVYLQGPWAKIPHTDGHFHPSPMLGGFGLKHPPPQIMIKNTVPANPPTTFSPAKFASFITQYSTGQVSVSEIWE
 AAV4 (585) NSNLPTVDRLTALGAVPGMVWQNRDIYYQGPWAKIPHTDGHFHPSPILGGFGLKHPPPQIFIKNTVPANPATTFSSTPVNSFITQYSTGQVSVQIDWE
 AAV5 (576) STTAPATGTYNLQEIIVPGSVMMERDVYLQGPWAKIPETGAHFHPSPAMGGFGLKHPPPMMLIKNTVPGN-ITSFSDVPVSSFITQYSTGQVTVMEWE
 AAV6 (587) SSTDPATGDVHVMGALPGMVWQDRDVYLQGPWAKIPHTDGHFHPSPMLGGFGLKHPPPQILIKNTVPANPPAEFSATKFASFITQYSTGQVSVSEIWE
 AAV7 (588) ANTAQAQTQVNNQGALPGMVWQNRDVYLQGPWAKIPHTDGNFHPSPMLGGFGLKHPPPQILIKNTVPANPEVFTPAKFASFITQYSTGQVSVSEIWE
 AAV8 (589) QNTAPQIGTVNSQGALPGMVWQNRDVYLQGPWAKIPHTDGNFHPSPMLGGFGLKHPPPQILIKNTVPADPPTTFNQSKLNSFITQYSTGQVSVSEIWE
 AAV9 (587) AQAQAQTGWVQNQGILPGMVWQDRDVYLQGPWAKIPHTDGNFHPSPMLGGFGLKHPPPQILIKNTVPADPPTAFNKKDKLNSFITQYSTGQVSVSEIWE
 AAV10 (589) QNAAPIVGAVNSQGALPGMVWQNRDVYLQGPWAKIPHTDGNFHPSPMLGGFGLKHPPPQILIKNTVPADPPTTFSQAKLASFITQYSTGQVSVSEIWE
 701 * ◇ ◇ * * ◇ 751
 AAV1 (687) LOKENSKRWNPVQYTSNYAKSANVDFTVDDNGLYTEPRPIGTRYLTRPL-SEQ ID NO:1
 AAV2 (686) LOKENSKRWNPYQYTSNYKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL-SEQ ID NO:2
 AAV3 (687) LQKENSKRWNPYQYTSNYKSVNVDFTVDTNGVYSEPRPIGTRYLTRNL-SEQ ID NO:3
 AAV4 (685) IQKERSKRWNPVQFTSNYGQQNSLLWAPDAAGKYTEPRPIGTRYLTHHL-SEQ ID NO:4
 AAV5 (675) LKKENSKRWNPYQYTYNNYNDPQFVDFAPDSTGEYRTRTRPIGTRYLTRPL-SEQ ID NO:5
 AAV6 (687) LQKENSKRWNPVQYTSNYAKSANVDFTVDDNGLYTEPRPIGTRYLTRPL-SEQ ID NO:6
 AAV7 (688) LQKENSKRWNPYQYTSNFEKQTVGDFAVDSQGVYSEPRPIGTRYLTRNL-SEQ ID NO:7
 AAV8 (689) LQKENSKRWNPYQYTSNYKYKSTSVDFAVNTEGVYSEPRPIGTRYLTRNL-SEQ ID NO:8
 AAV9 (687) LQKENSKRWNPYQYTSNYKYKSNVFEAVNTEGVYSEPRPIGTRYLTRNL-SEQ ID NO:9
 AAV10 (689) LQKENSKRWNPYQYTSNYKYKSTNVDFAVNTDGYSEPRPIGTRYLTRNL-SEQ ID NO:10

FIG. 2D-3

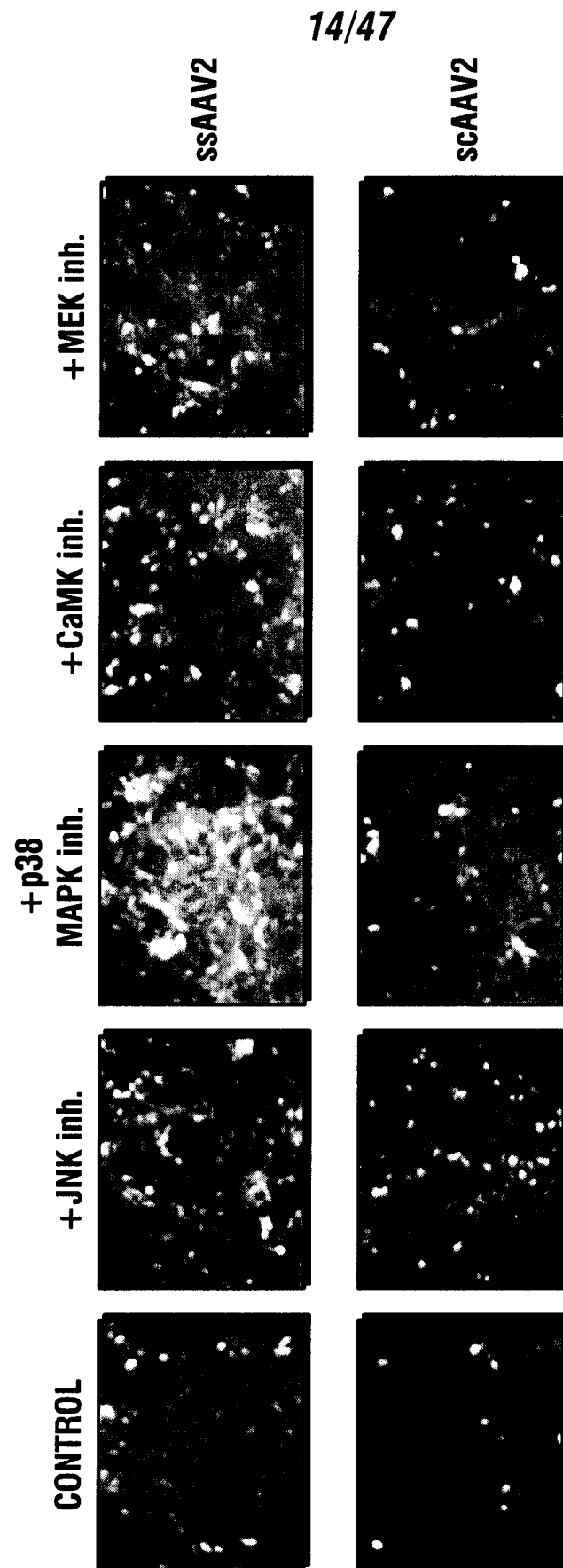


FIG. 3A

15/47

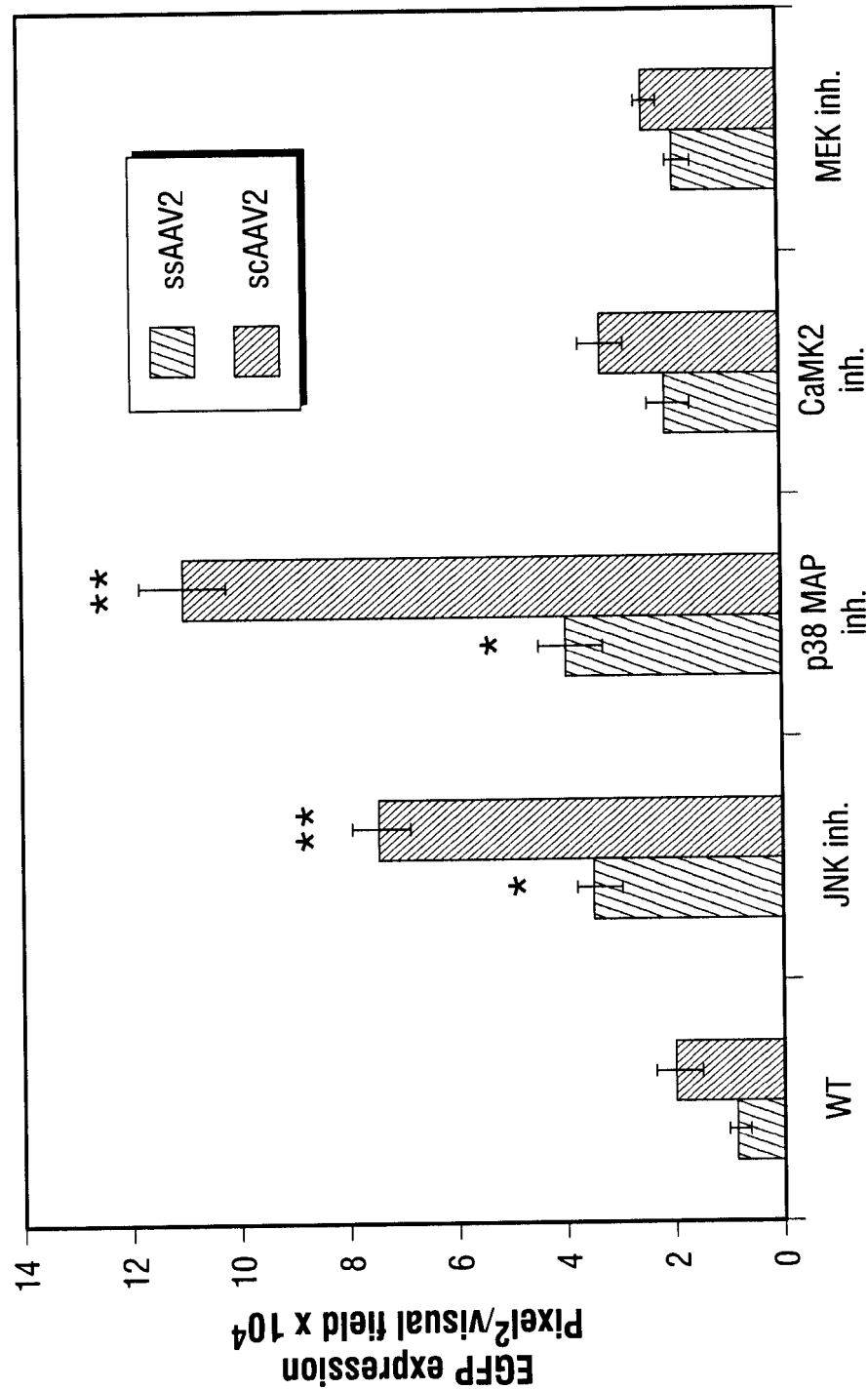


FIG. 3B

16/47

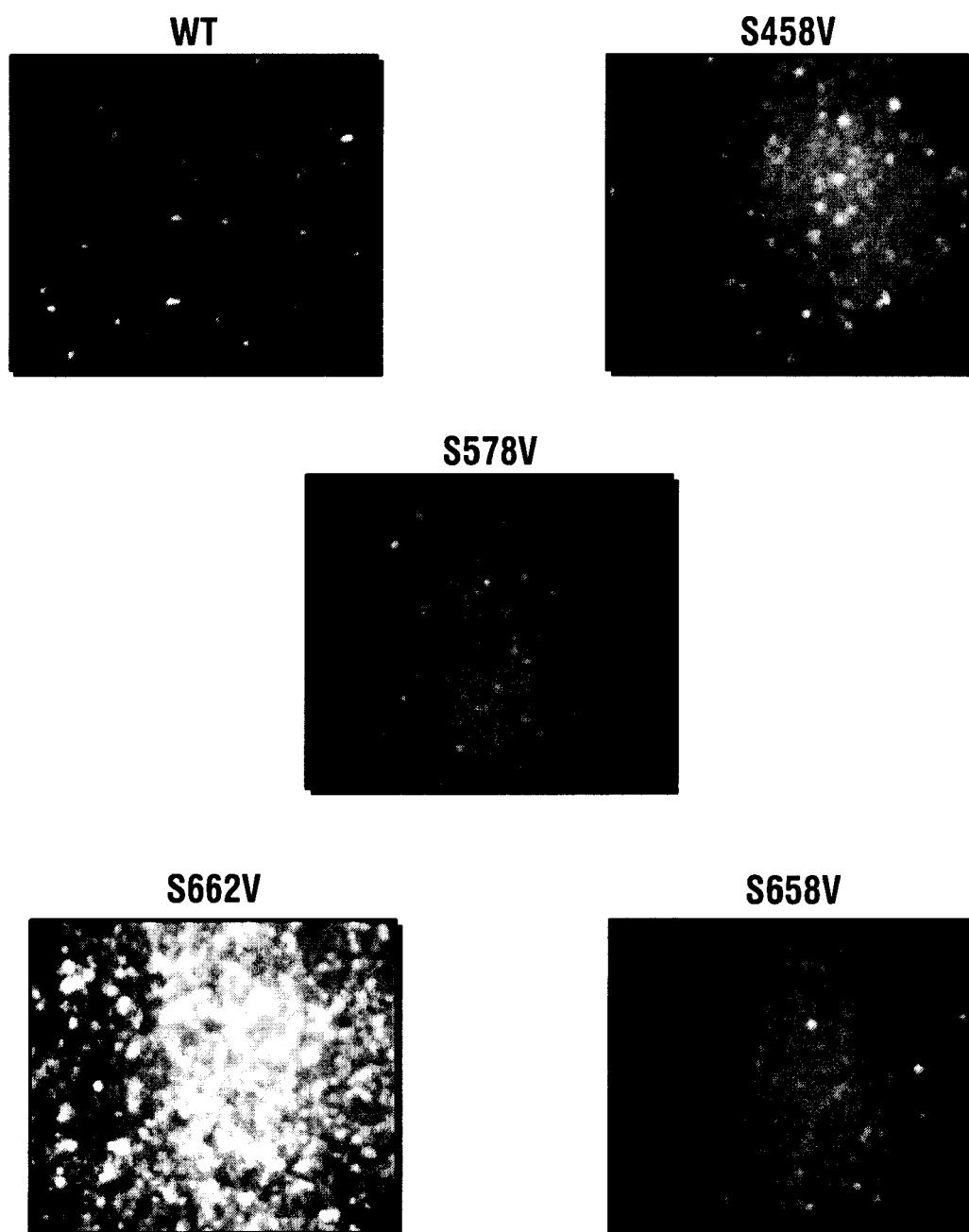


FIG. 4A

17/47

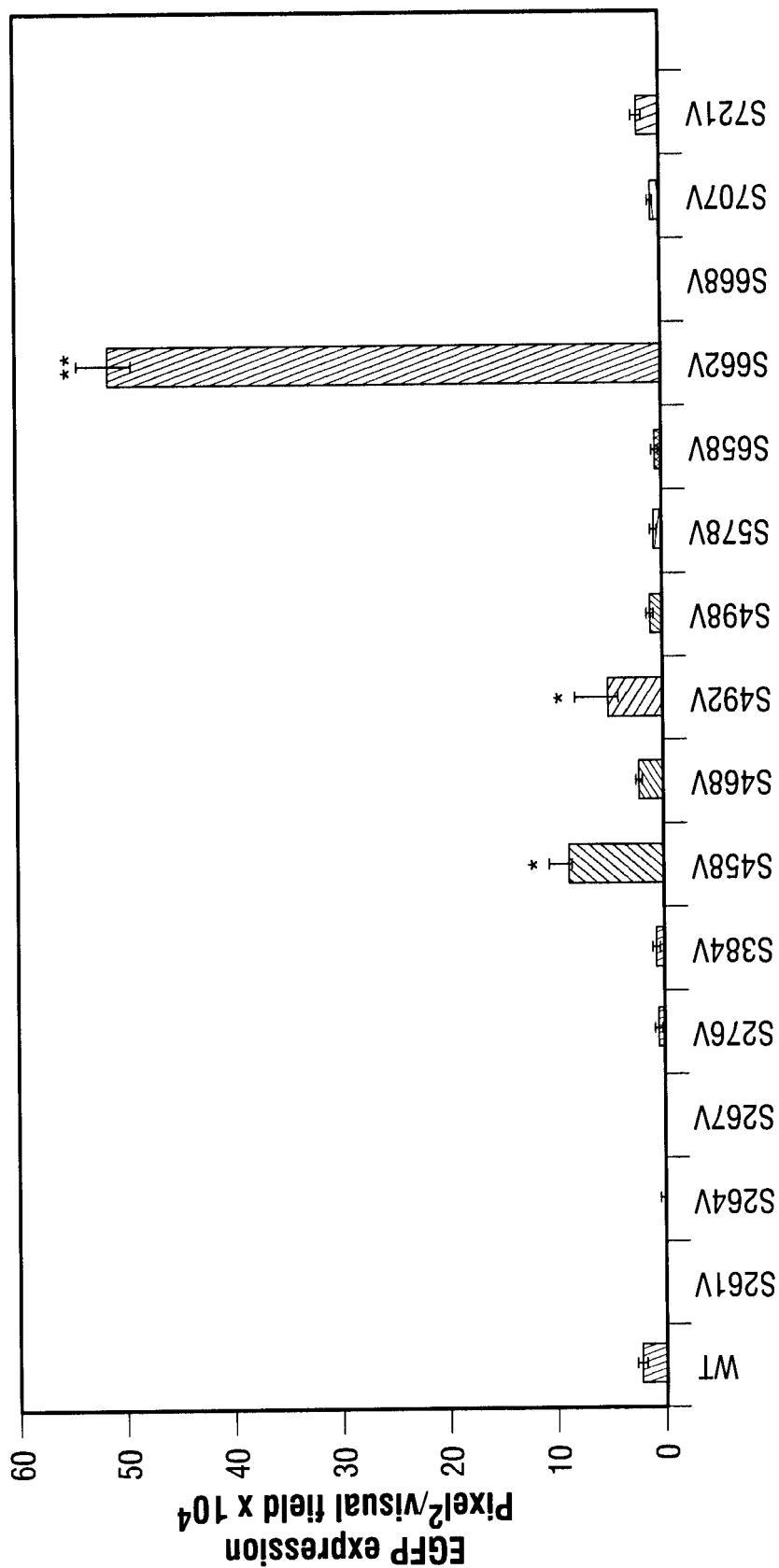


FIG. 4B

18/47

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

19/47

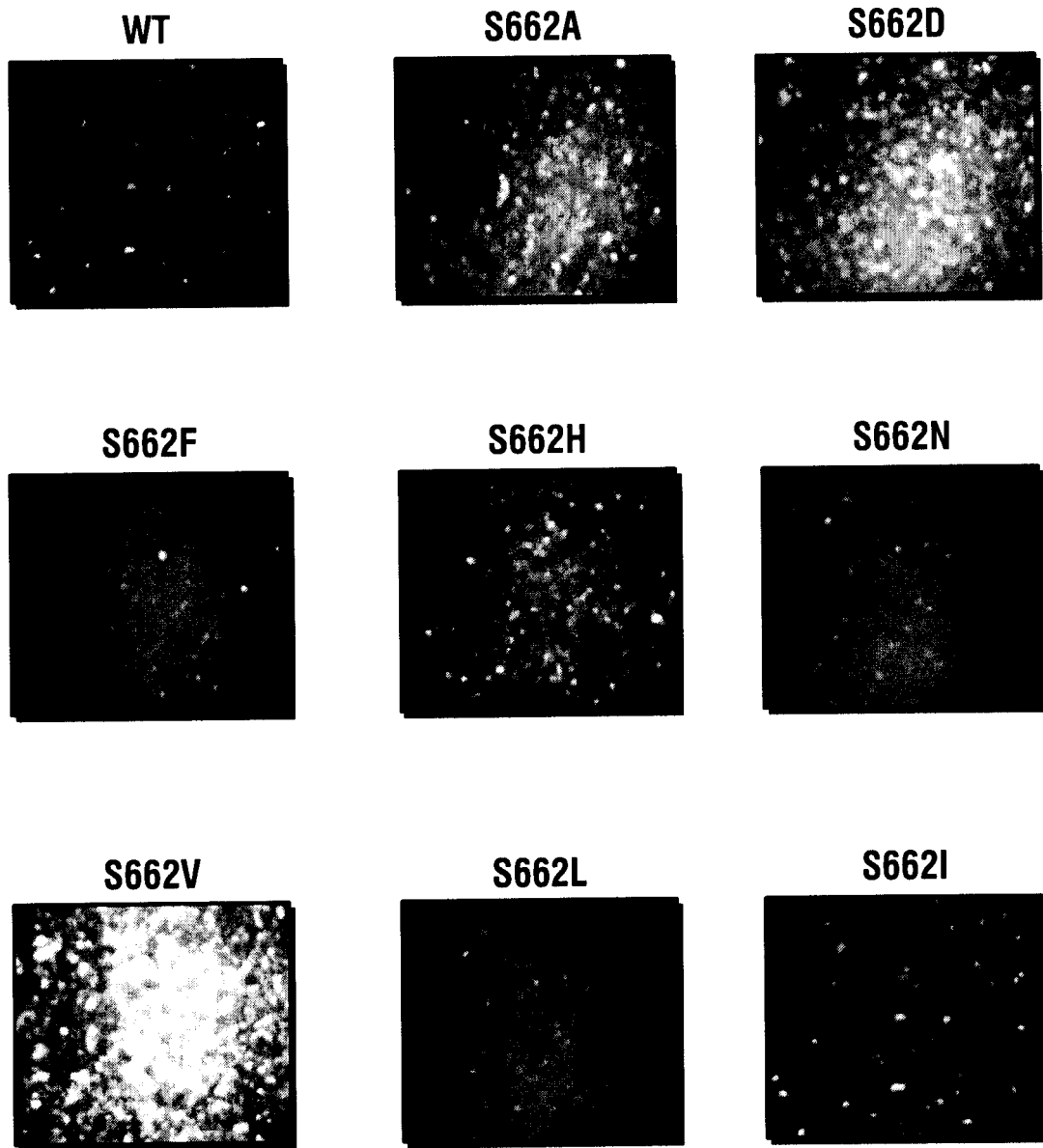


FIG. 6A

20/47

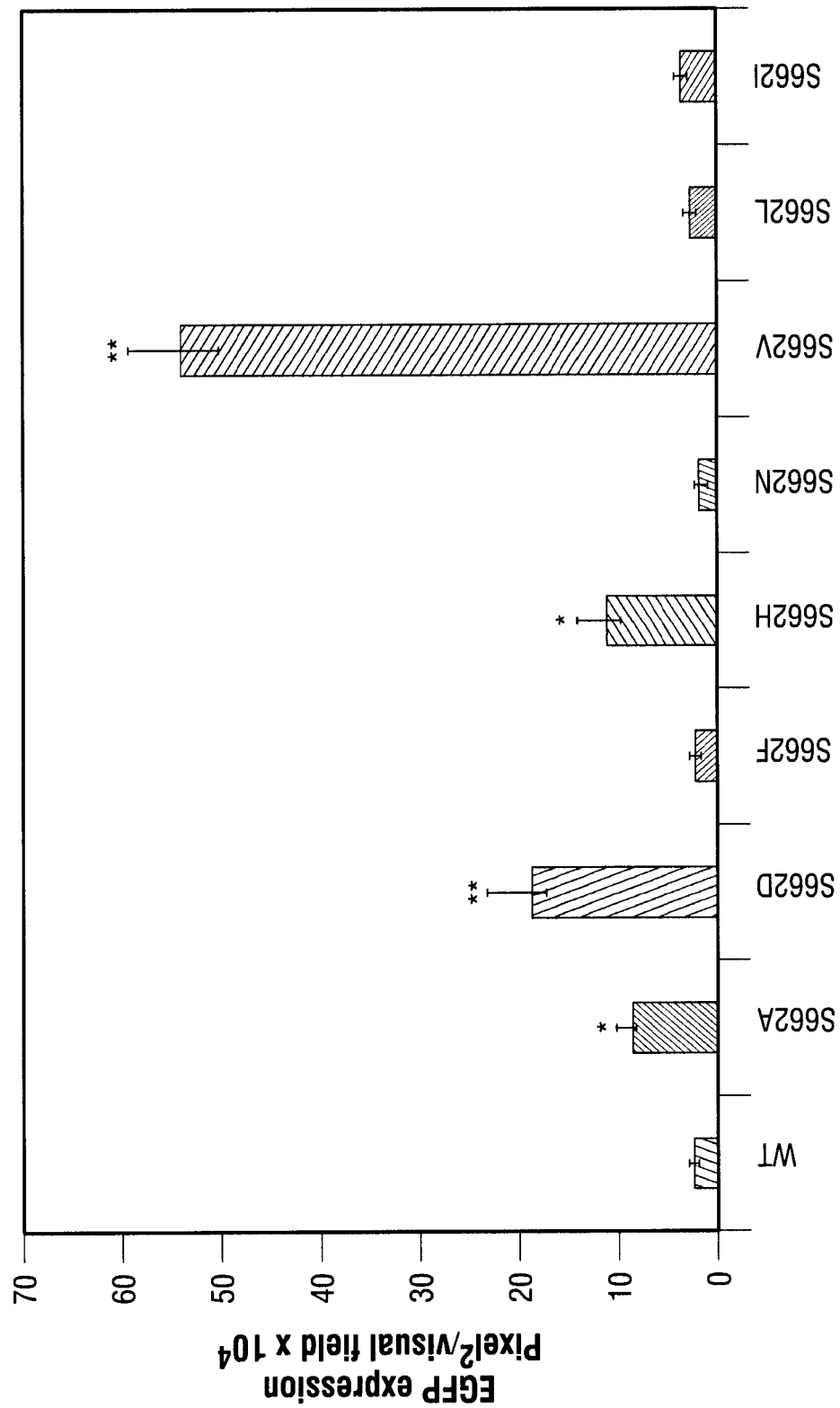


FIG. 6B

21/47

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

22/47

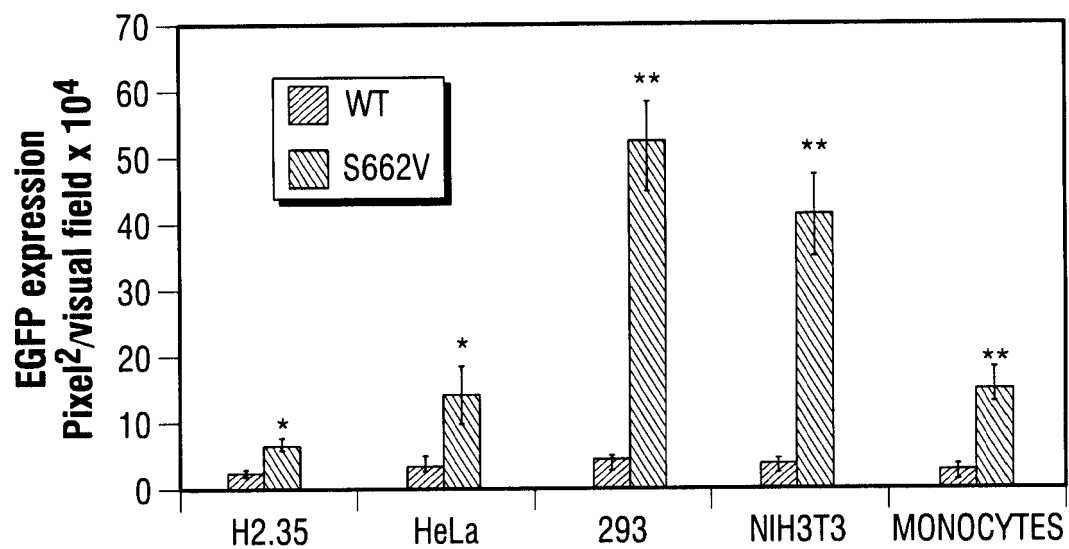


FIG. 8A

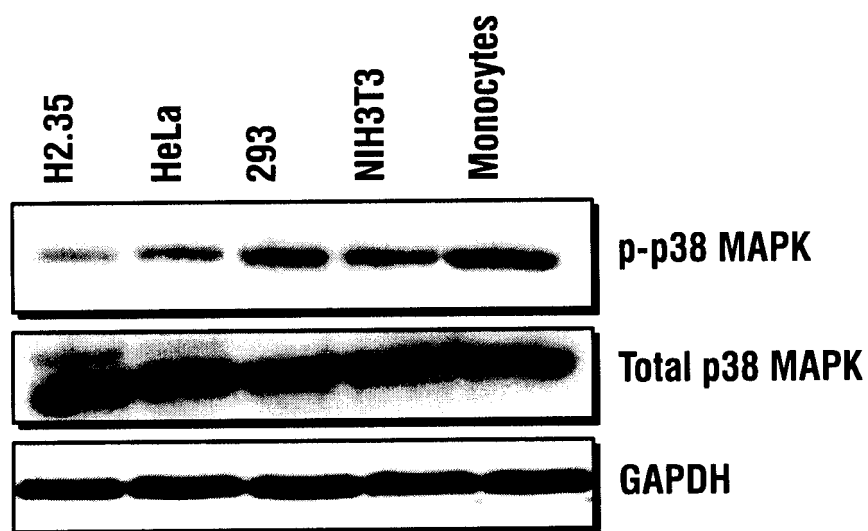


FIG. 8B

23/47

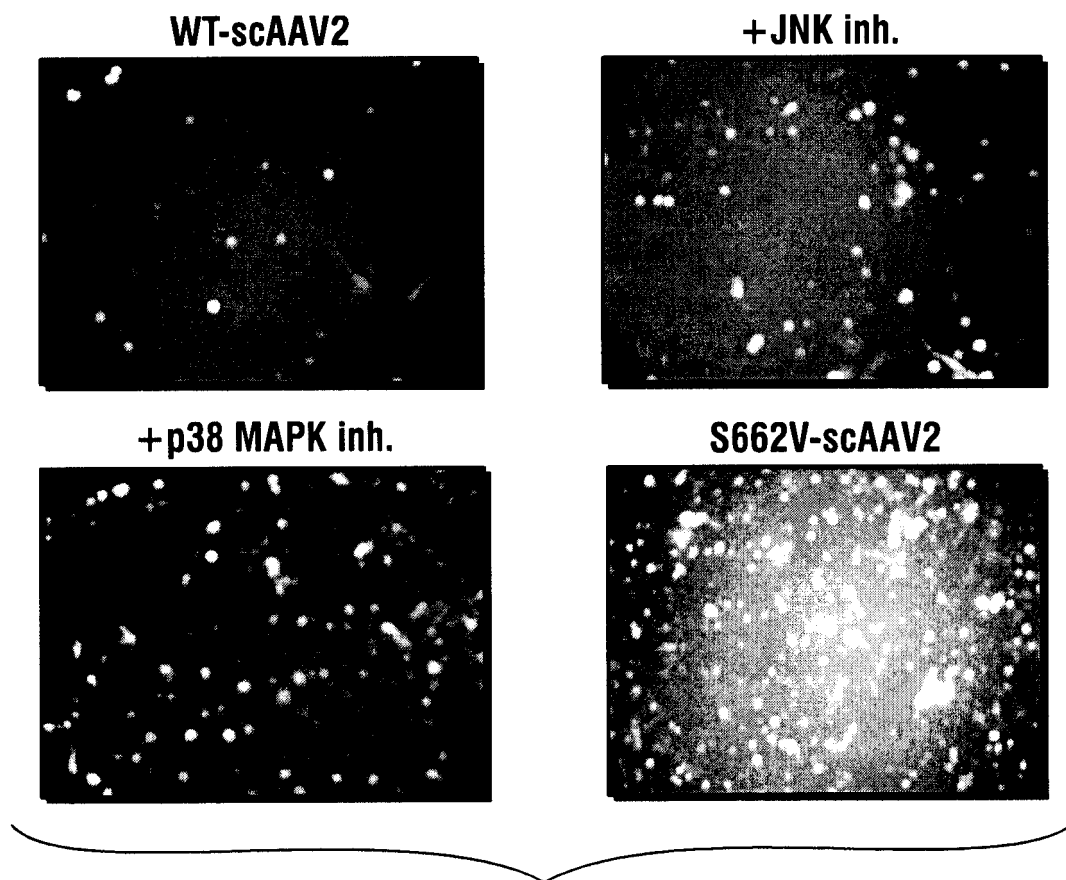


FIG. 9A

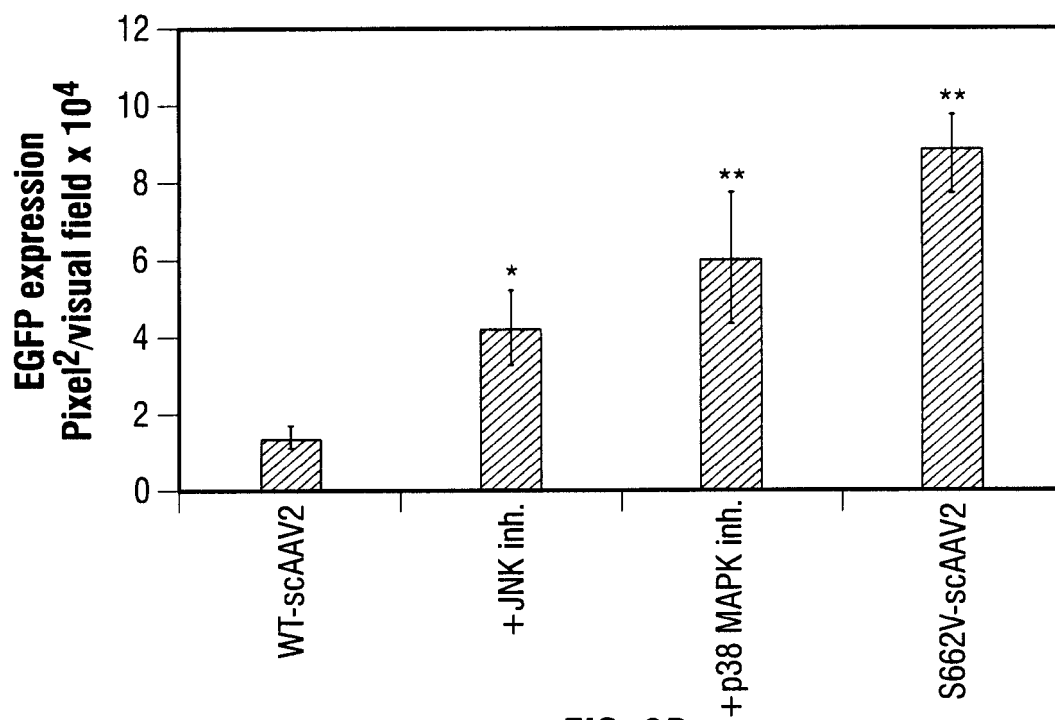


FIG. 9B

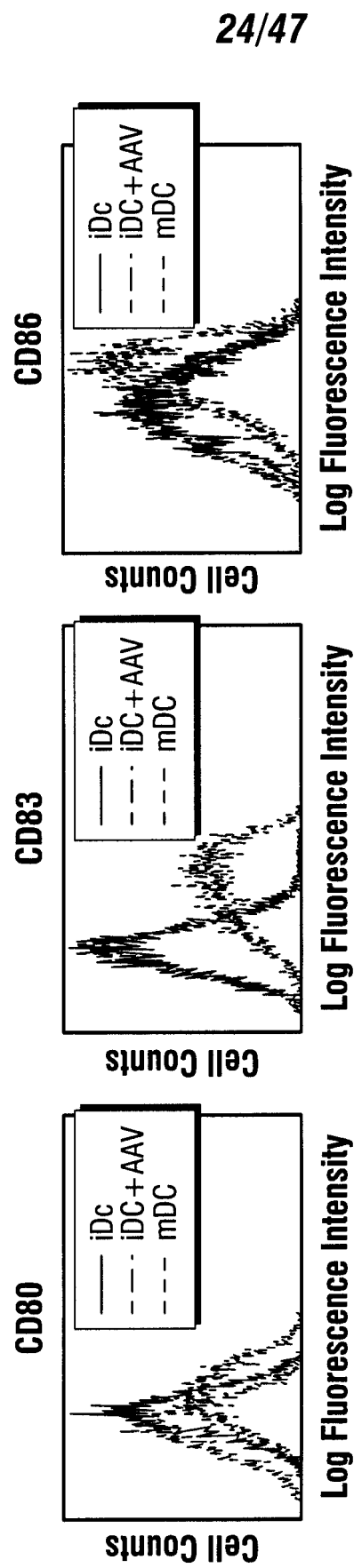
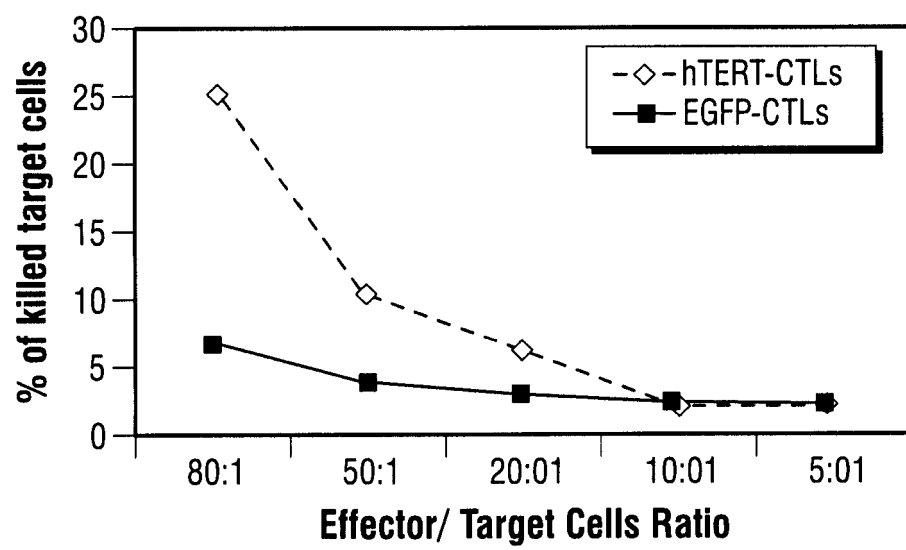


FIG. 9C

25/47**FIG. 10**

26/47

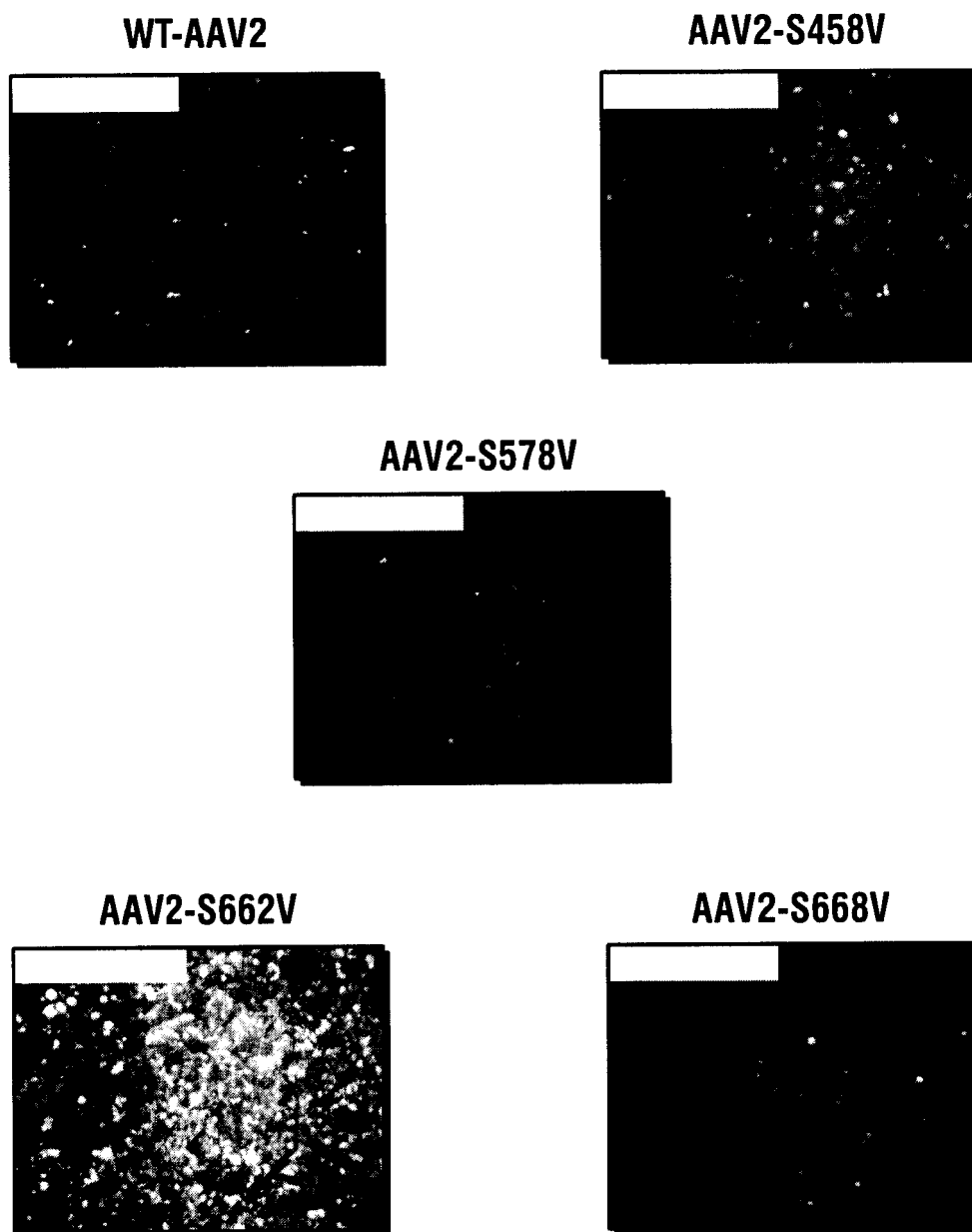


FIG. 11A

27/47

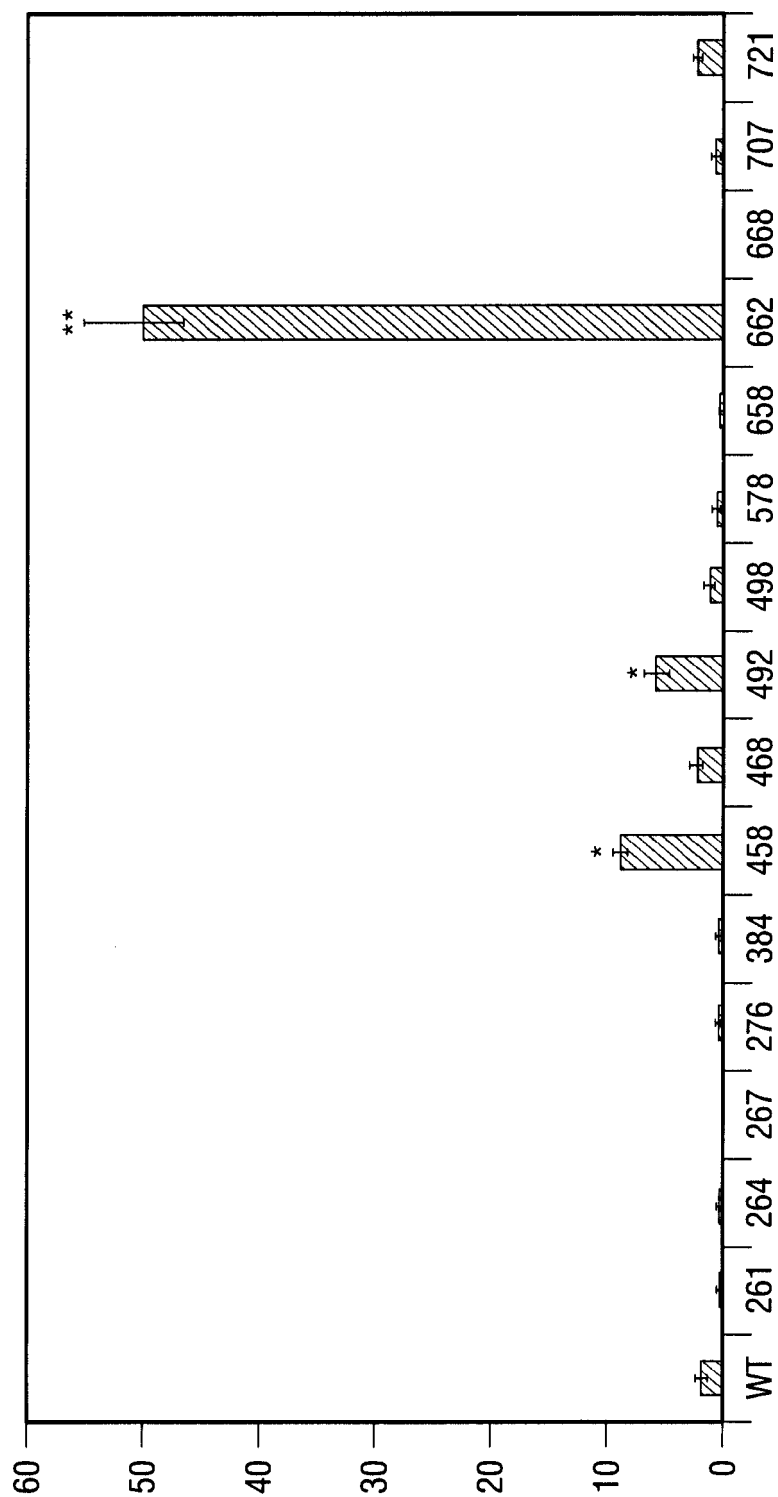


FIG. 11B

28/47

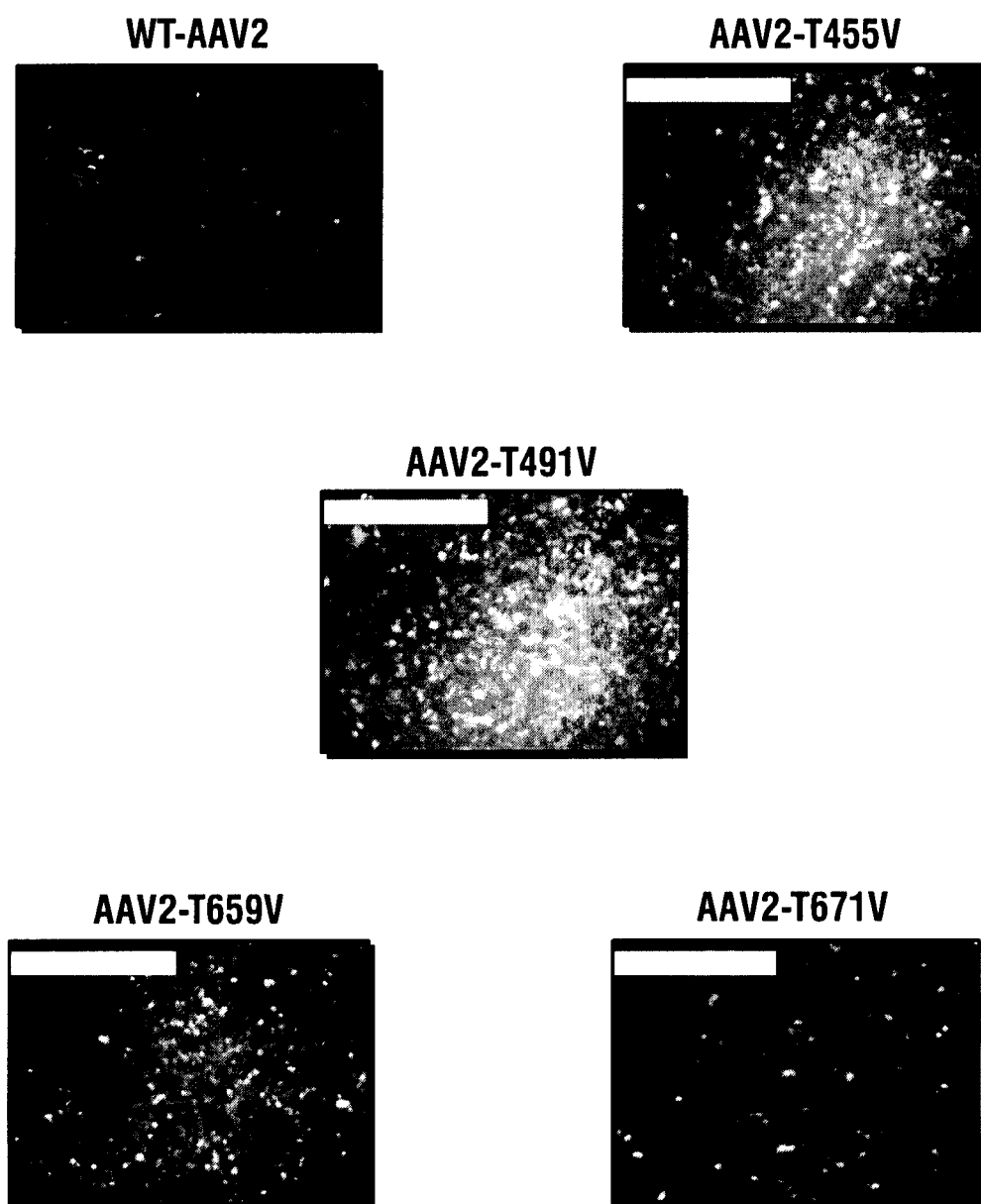


FIG. 12A

29/47

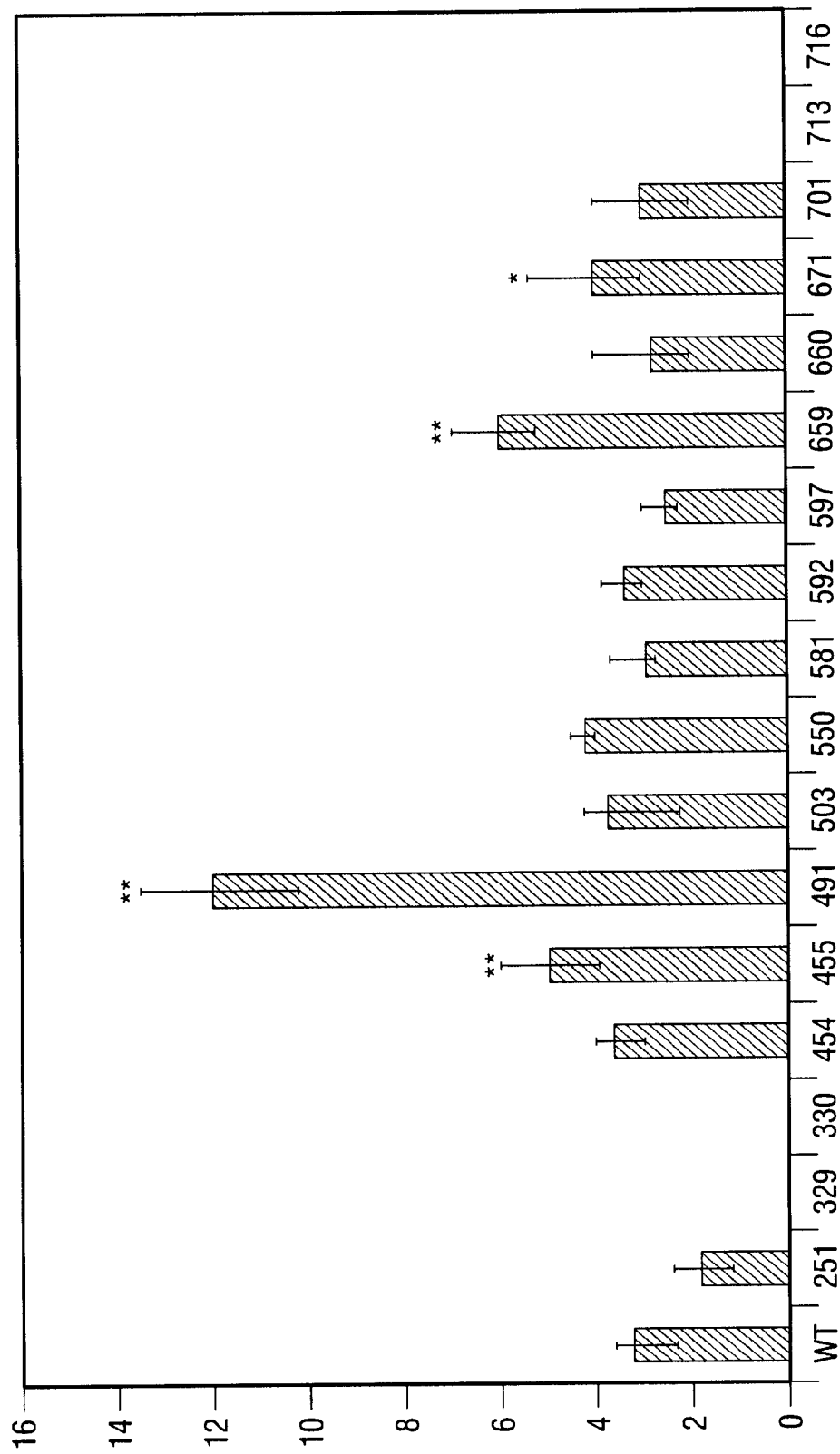
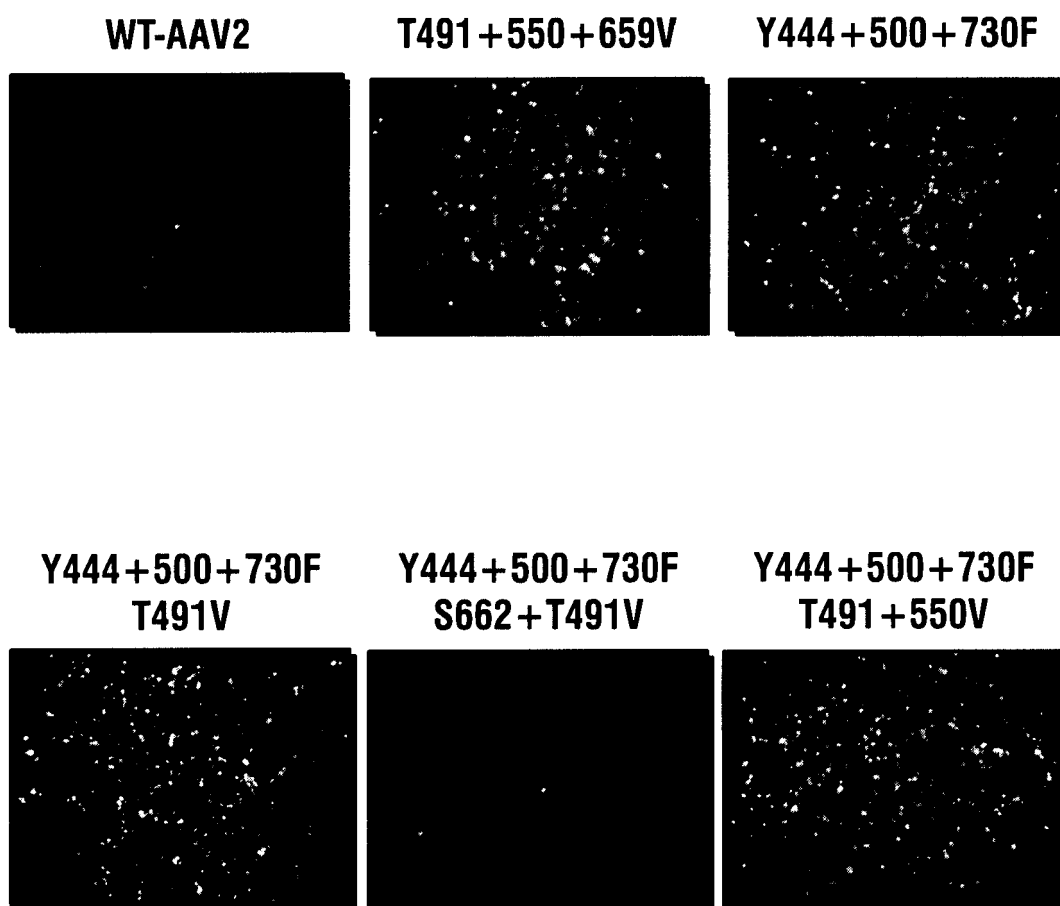


FIG. 12B

30/47**FIG. 13A**

31/47

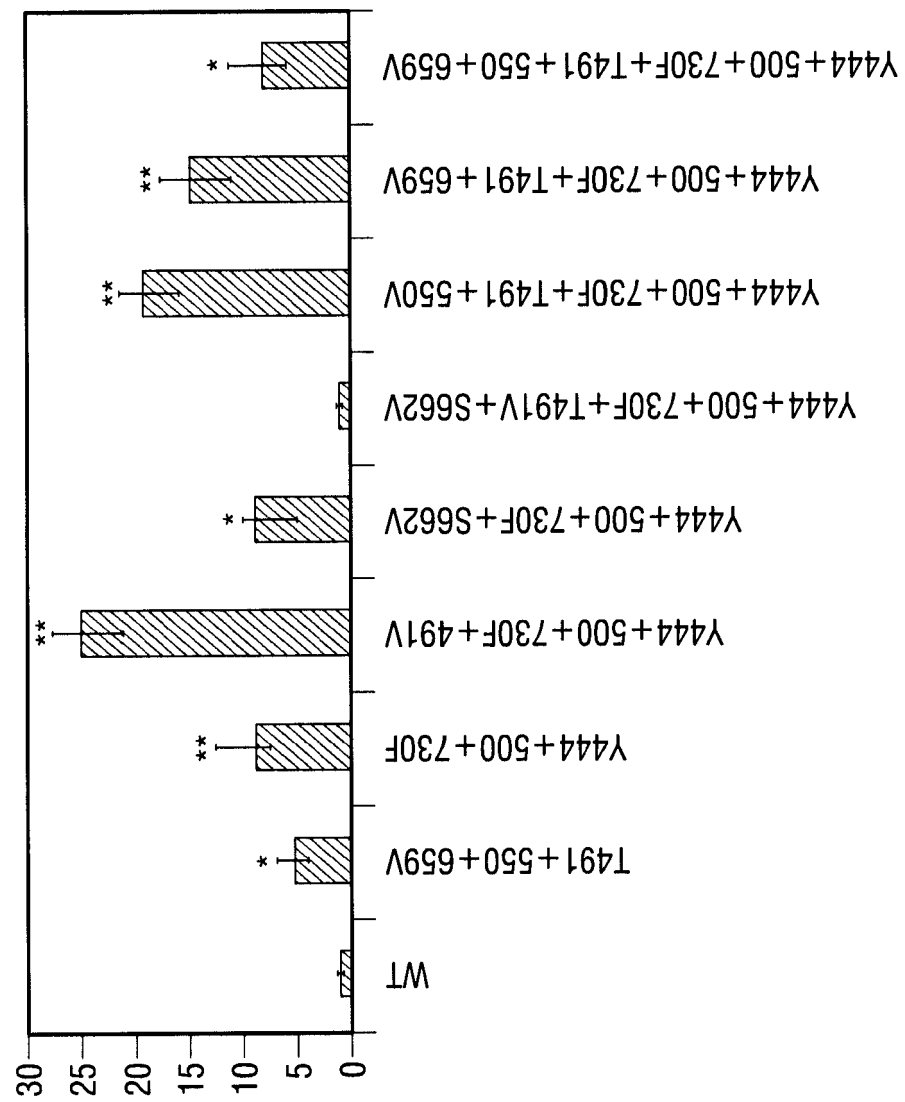


FIG. 13B

32/47

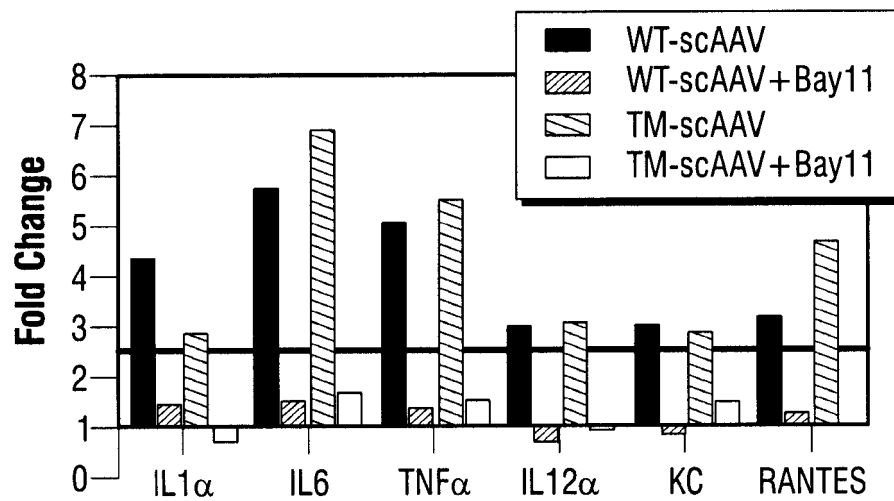


FIG. 14A

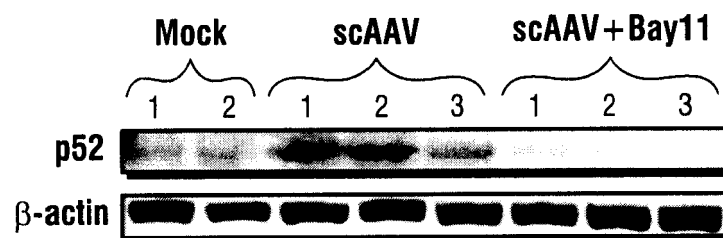
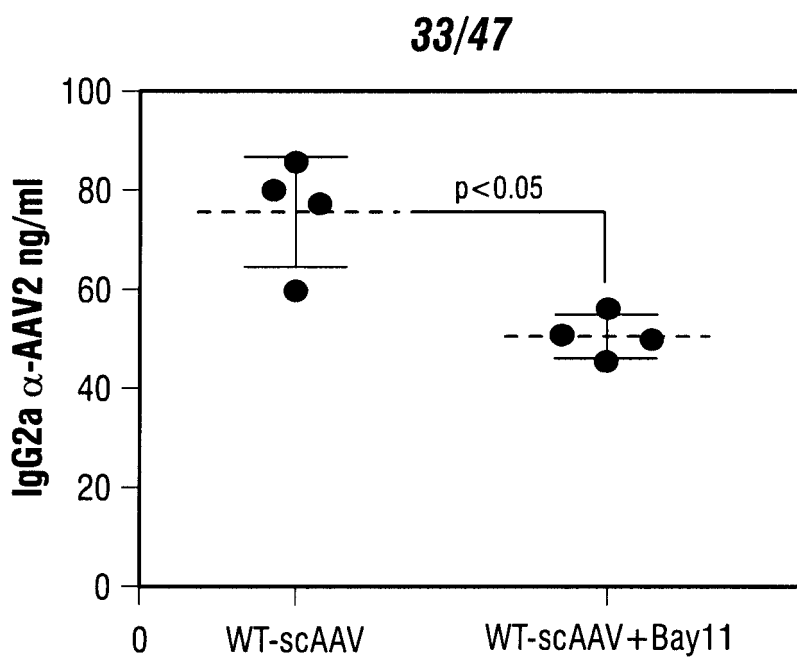
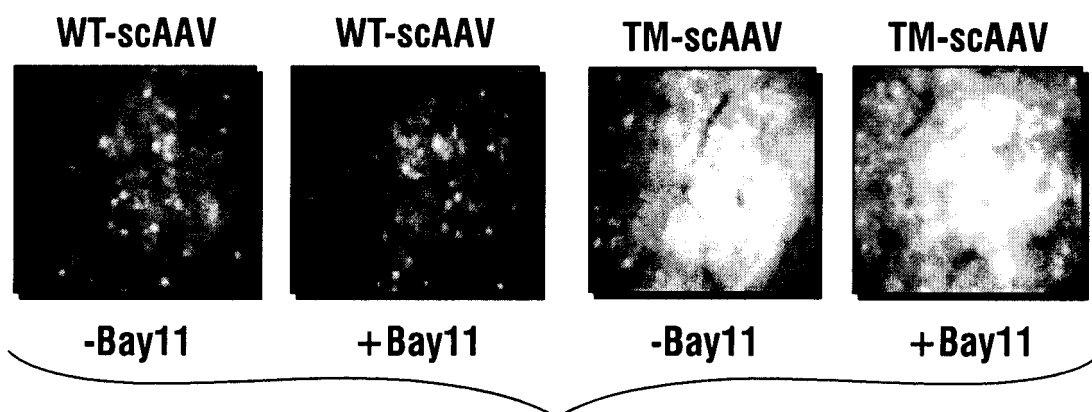
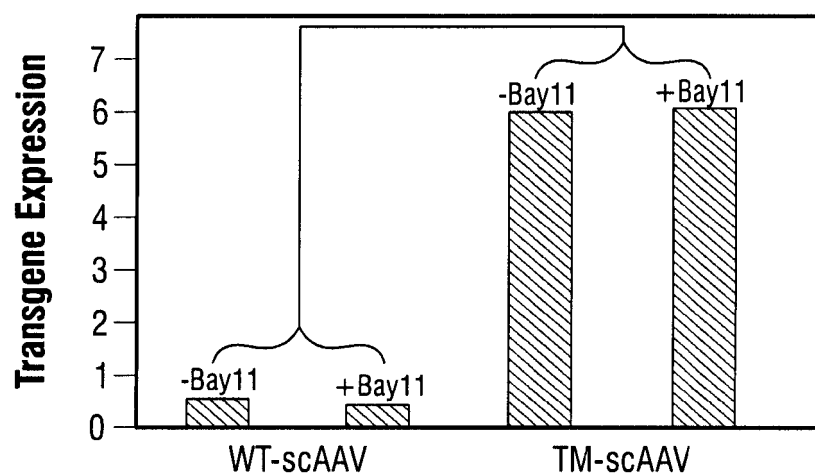


FIG. 14B

**FIG. 14C****FIG. 14D****FIG. 14E**

34/47

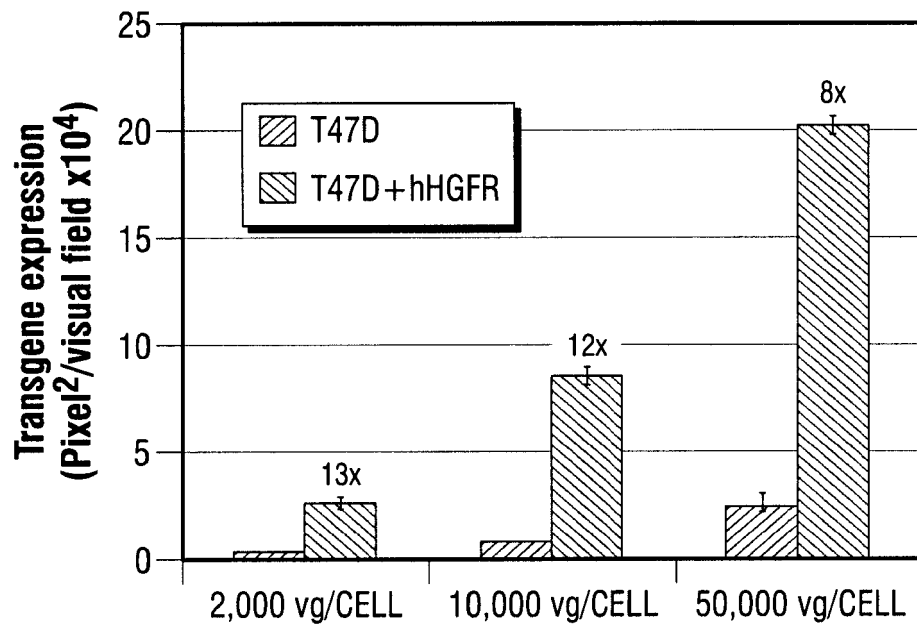


FIG. 15A

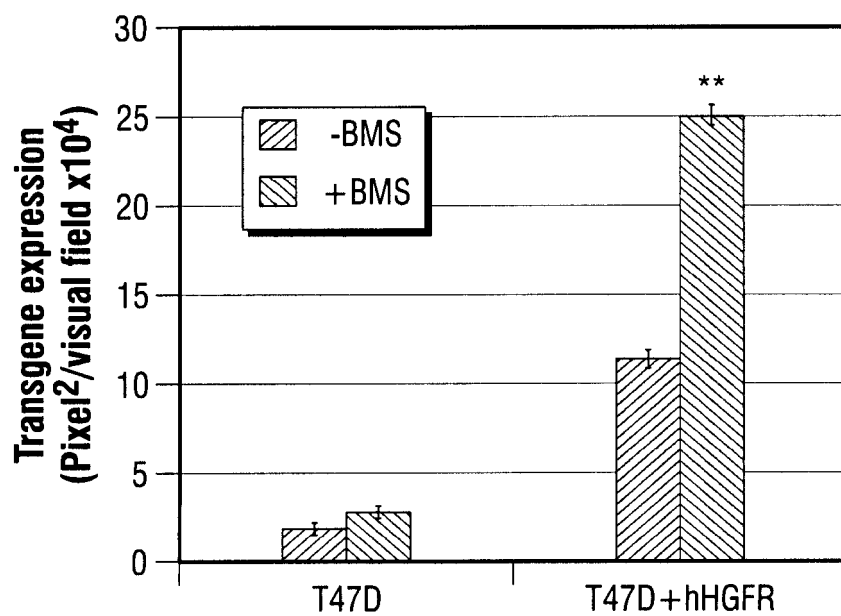


FIG. 15B

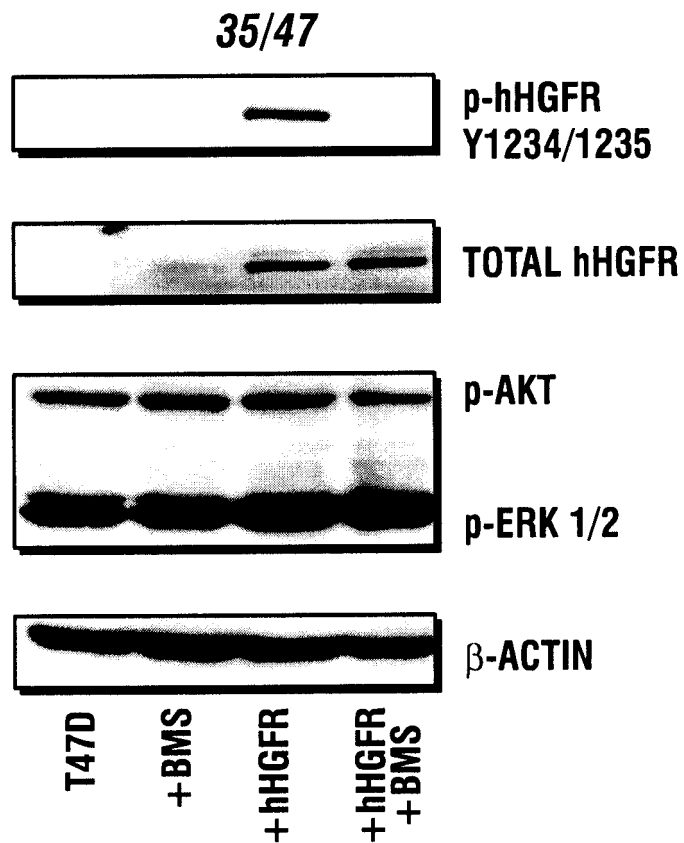


FIG. 15C

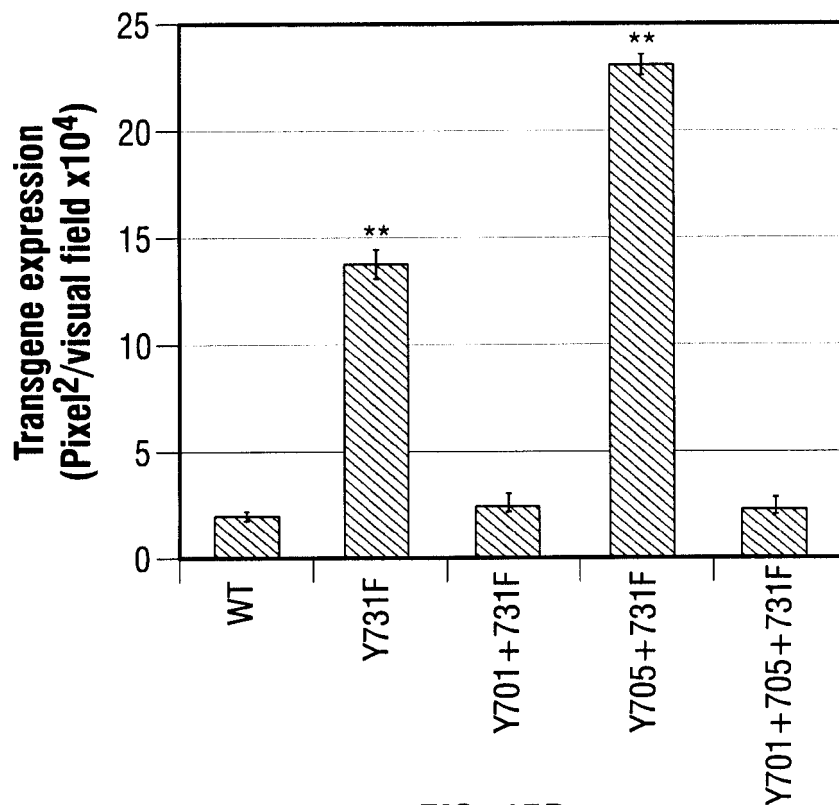


FIG. 15D

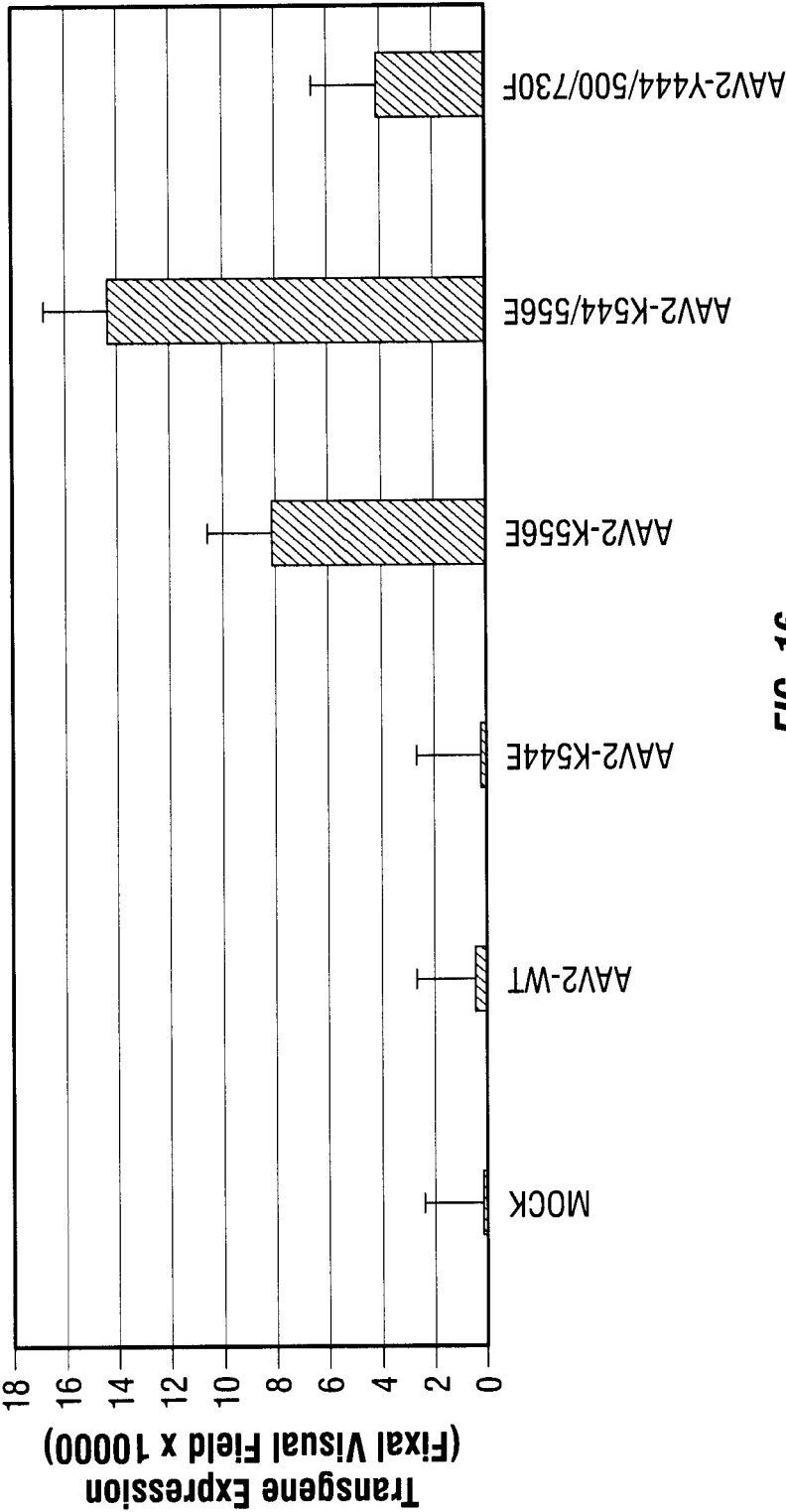


FIG. 16

37/47

MOCK

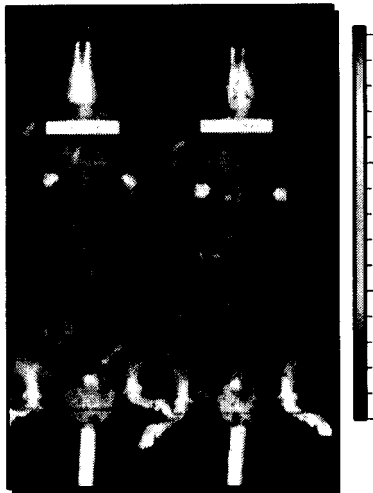


FIG. 17A

WT-AAV8



FIG. 17B

K530E-AAV8



FIG. 17C

K547E-AAV8

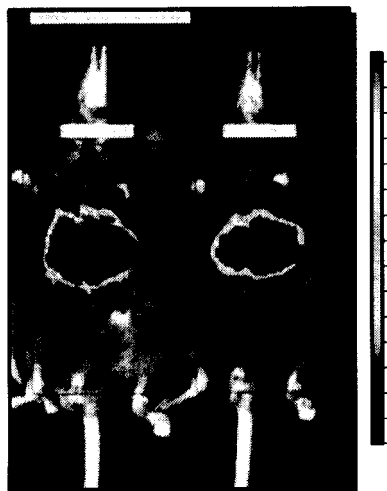


FIG. 17D

K569-AAV8E

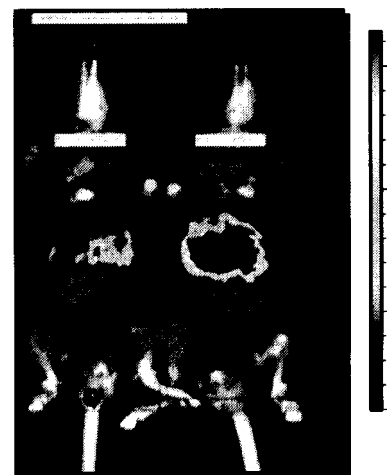


FIG. 17E

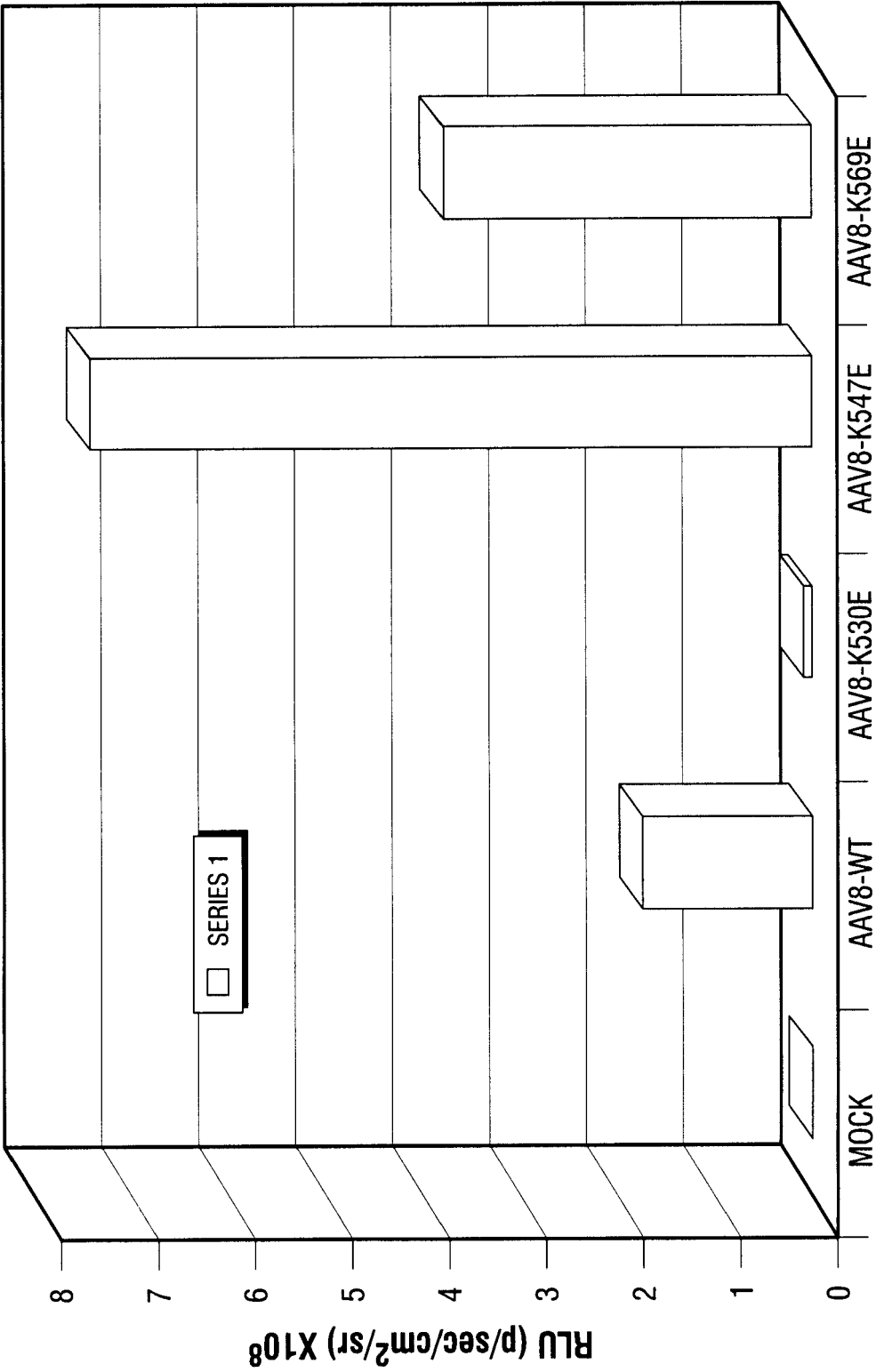


FIG. 18

39/47

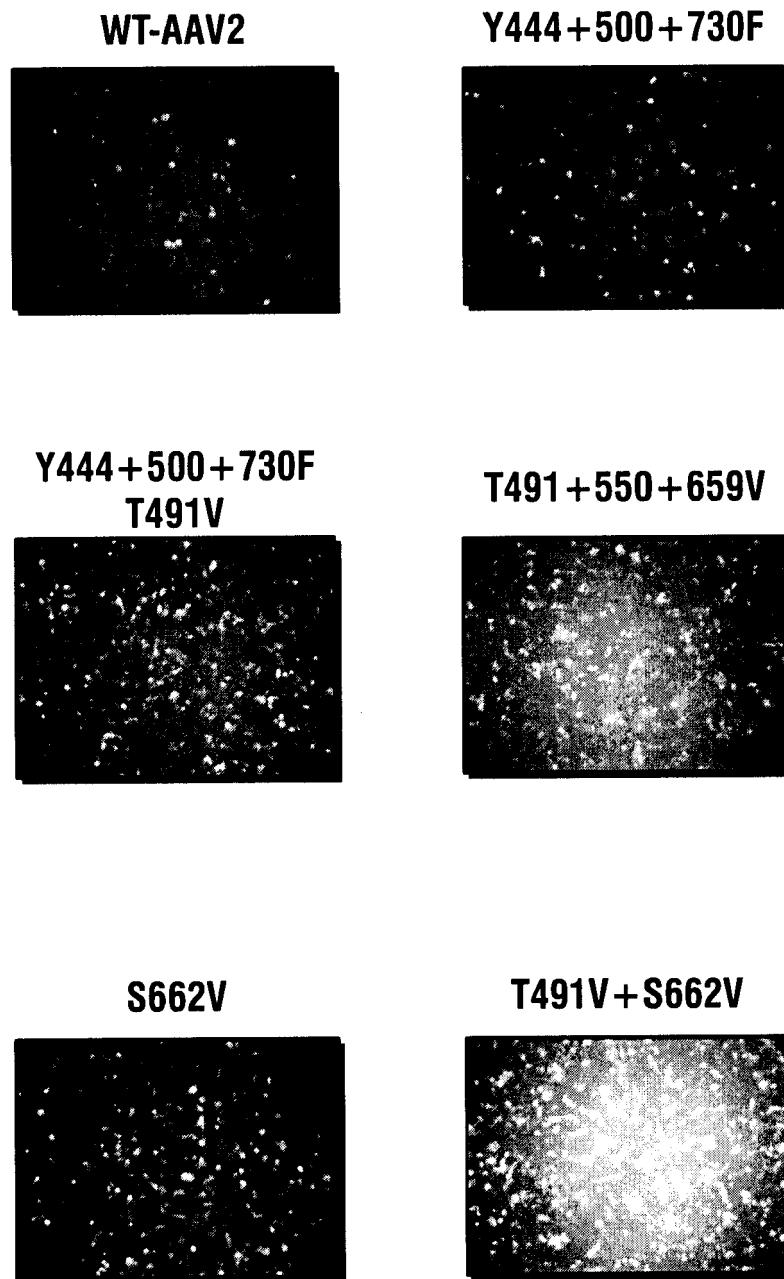


FIG. 19A

40/47

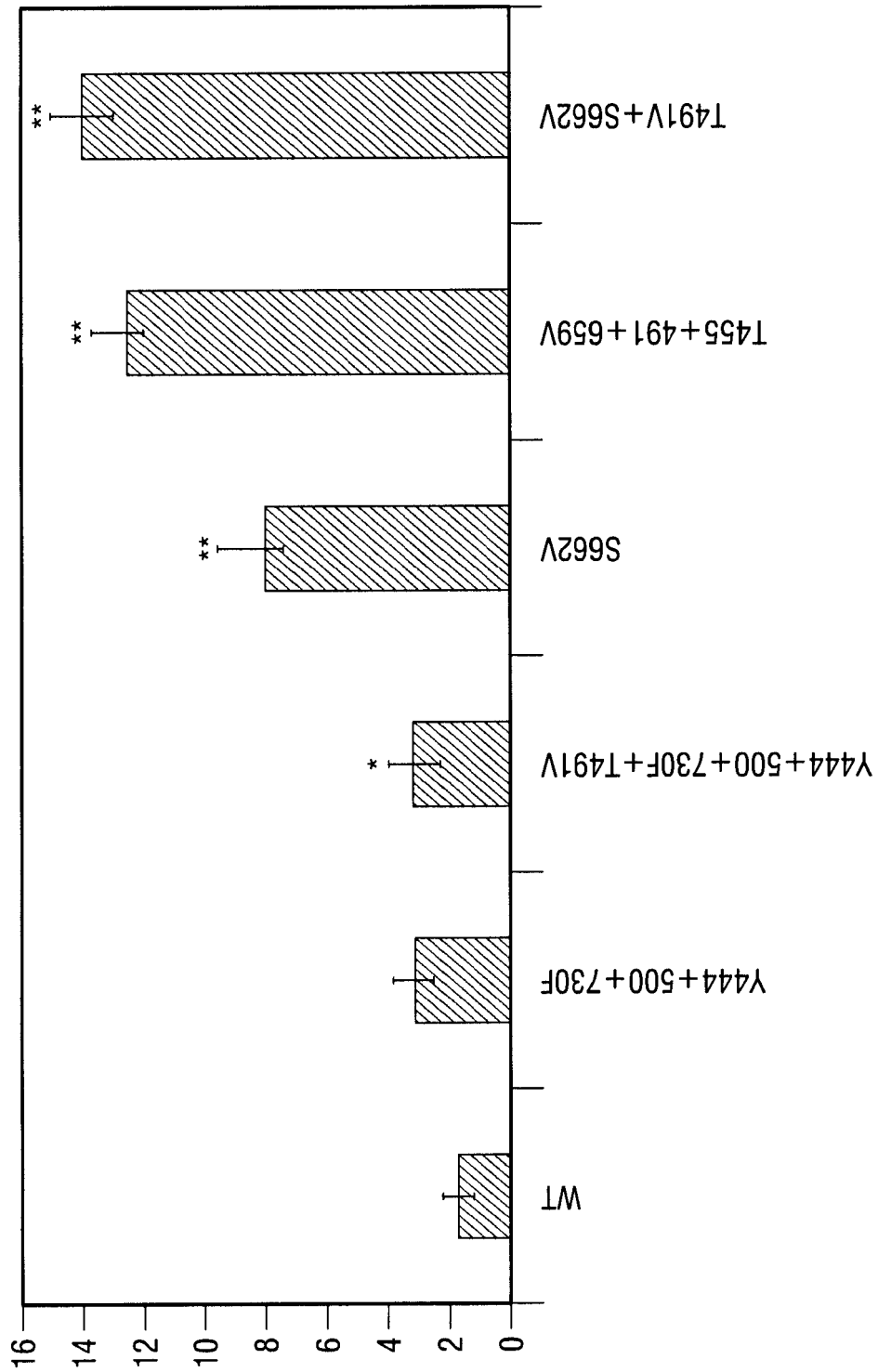


FIG. 19B

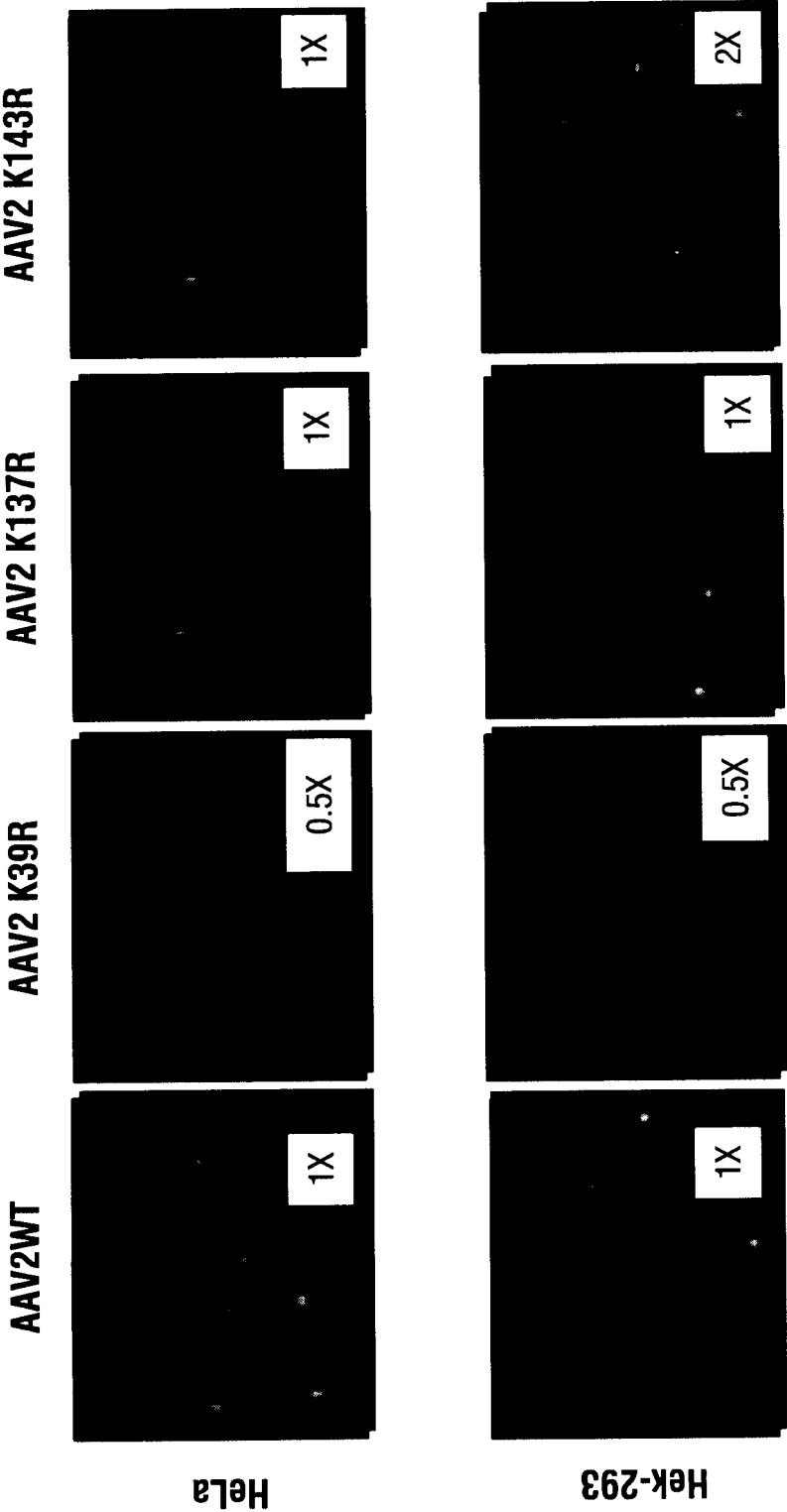


FIG. 20A

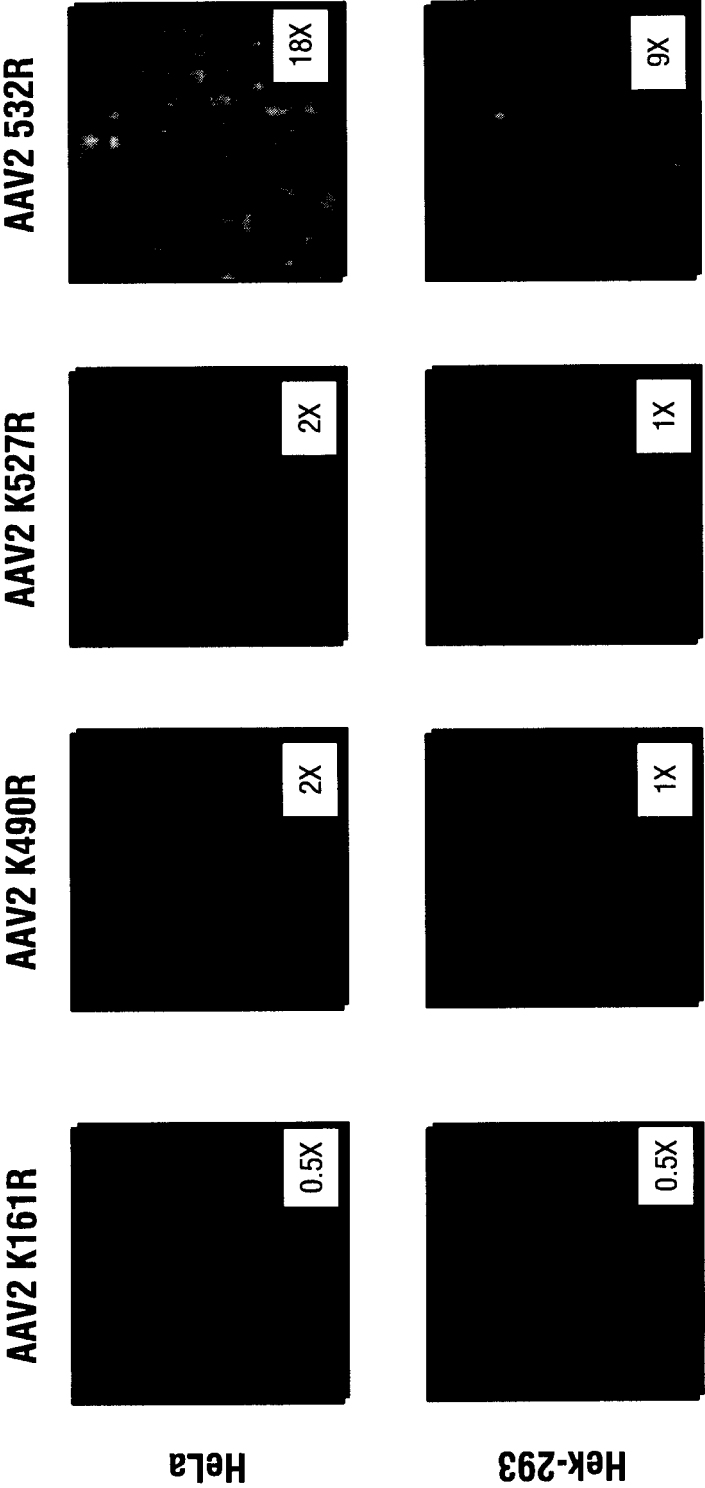


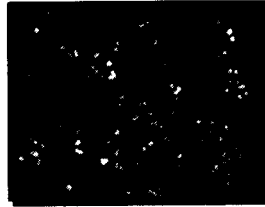
FIG. 20B

43/47

MOCK

*FIG. 21A*

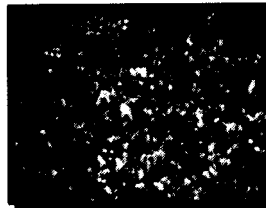
WT

*FIG. 21B*

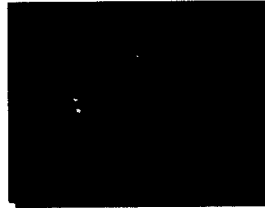
K258E

*FIG. 21C*

K490E

*FIG. 21D*

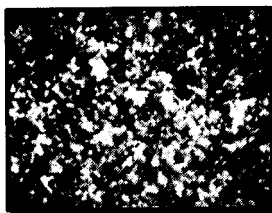
K527E

*FIG. 21E*

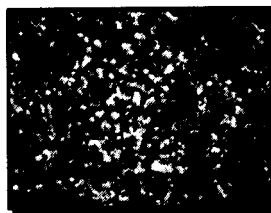
K532E

*FIG. 21F*

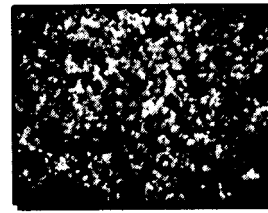
K544E

*FIG. 21G*

K549E

*FIG. 21H*

K556E

*FIG. 21I*

44/47

MOCK

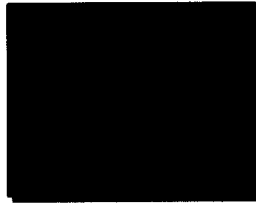


FIG. 22A

WT

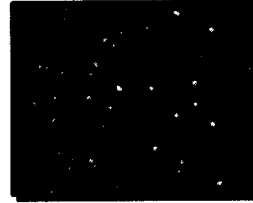


FIG. 22B

K258E



FIG. 22C

K490E

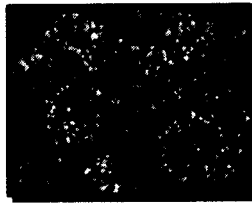


FIG. 22D

K527E

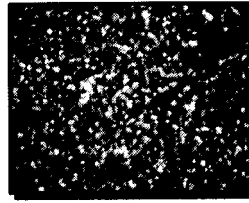


FIG. 22E

K532E

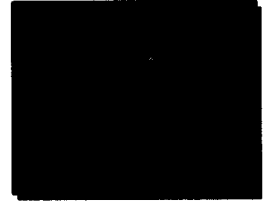


FIG. 22F

K544E

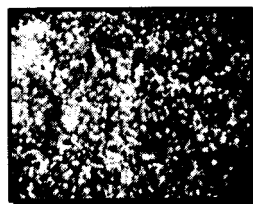


FIG. 22G

K549E

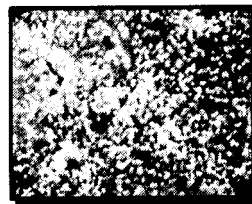


FIG. 22H

K556E

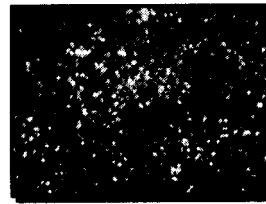


FIG. 22I

45/47

MOCK

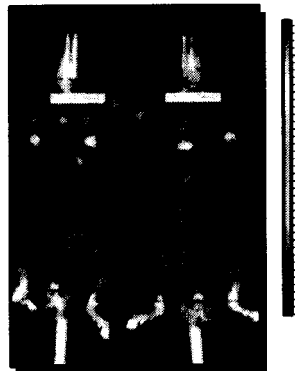


FIG. 23A

WT-AAV2

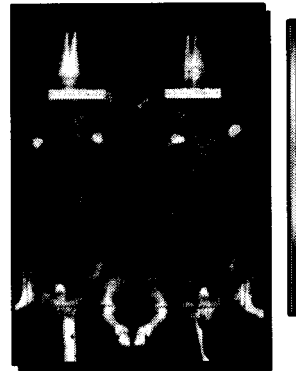


FIG. 23B

K544E-AAV2

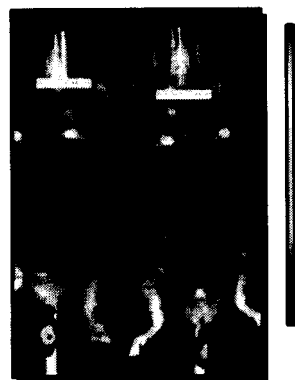


FIG. 23C

K-556E-AAV2

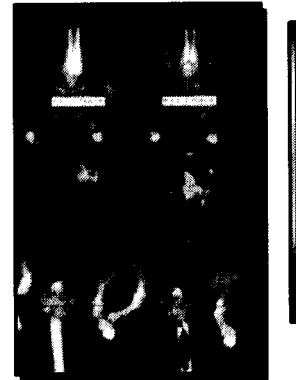


FIG. 23D

K544+556E-AAV2



FIG. 23E

Y730+500+444F-AAV2

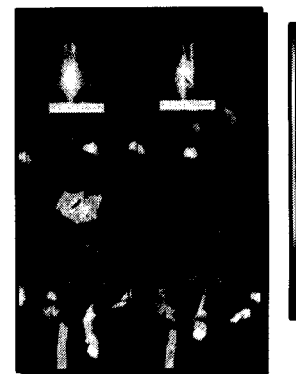
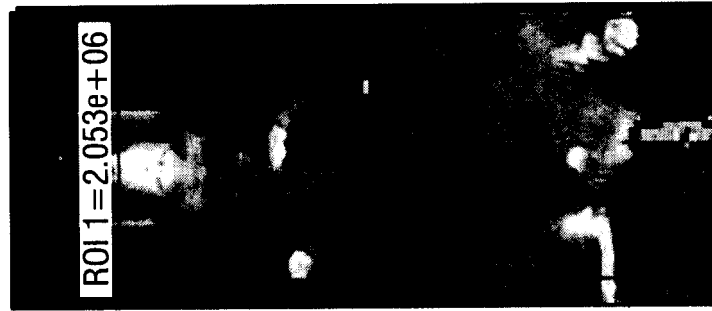


FIG. 23F

46/47

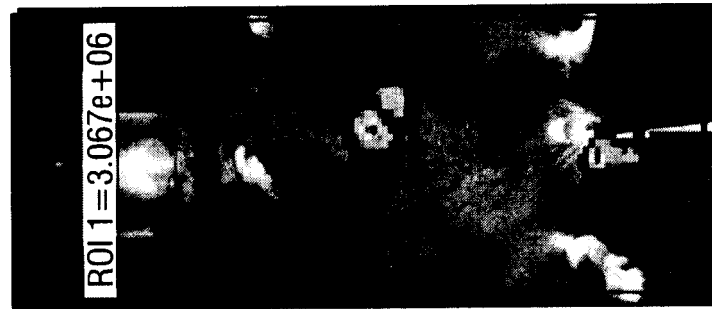
K569E-AAV8



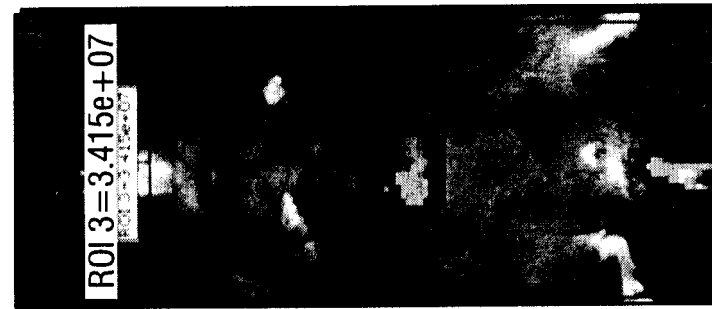
K547E-AAV8



K530E-AAV8



WT-AAV8



MOCK

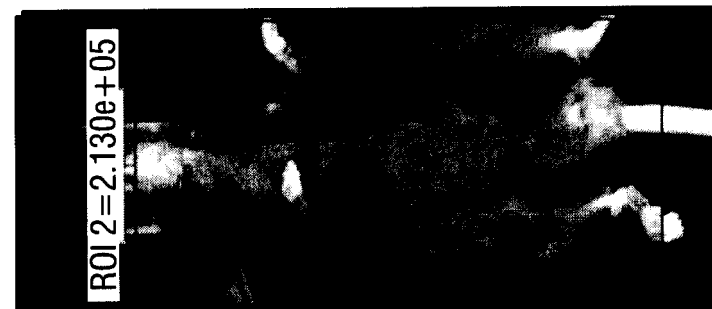


FIG. 24

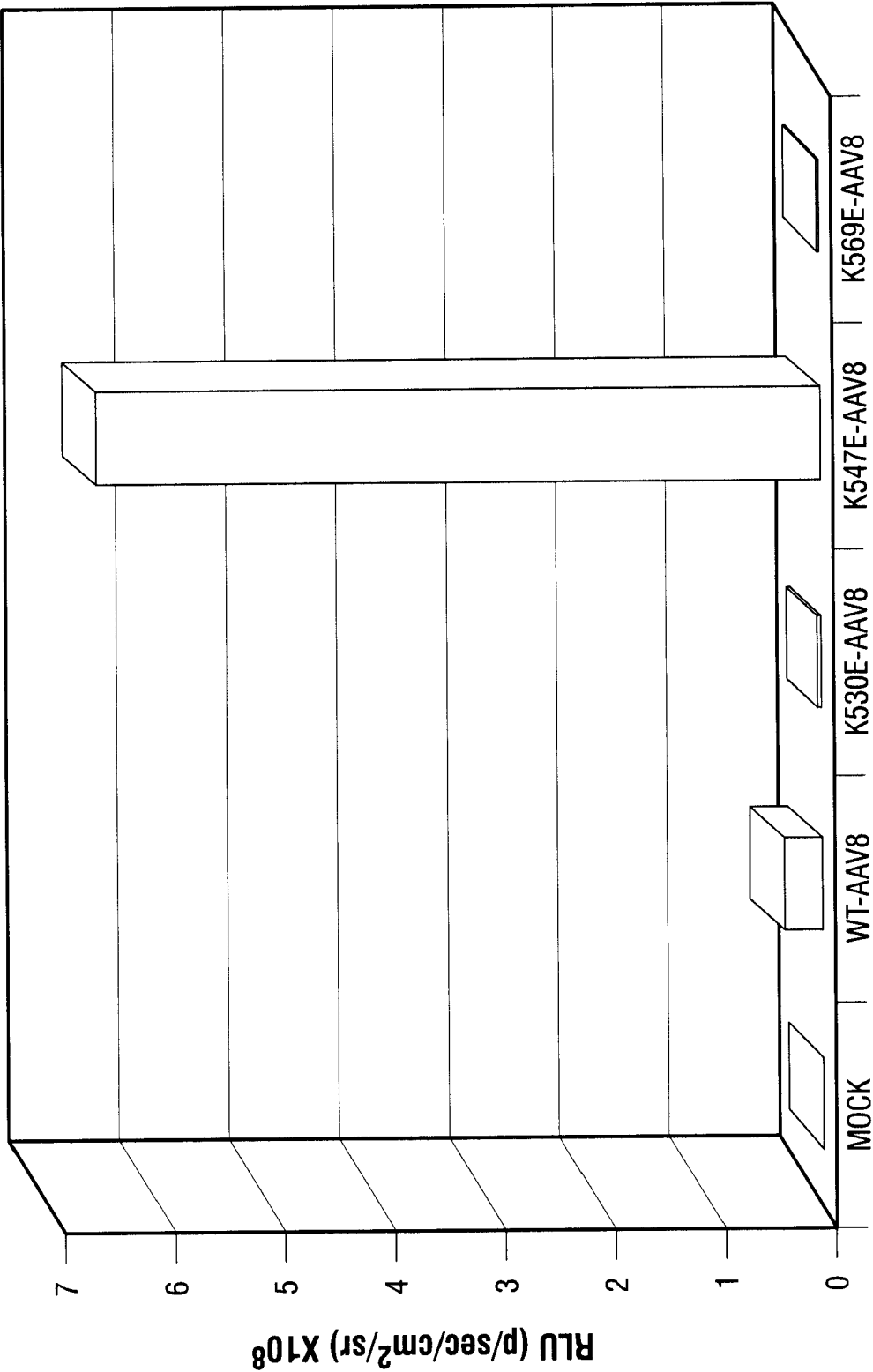


FIG. 25