Figure 1

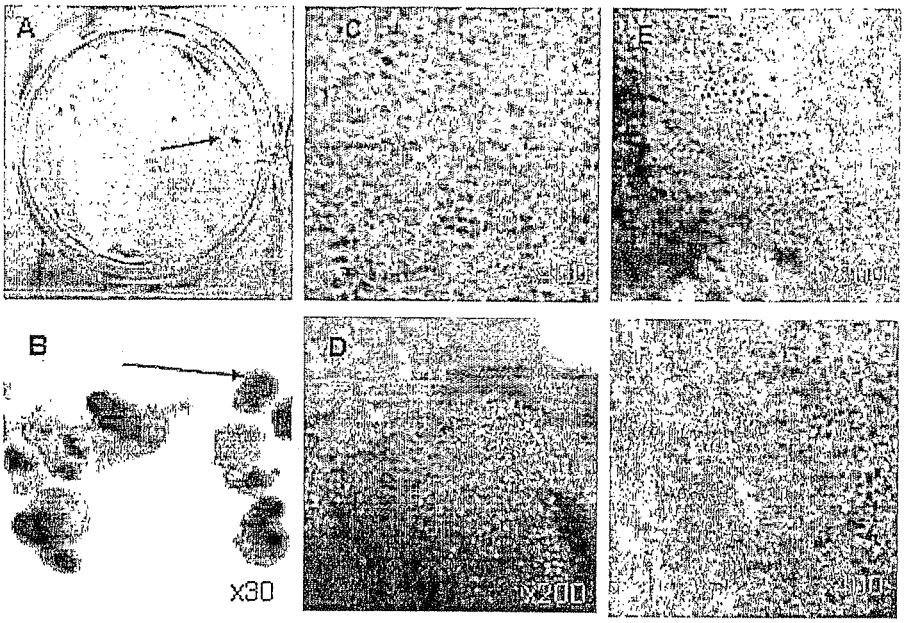


Figure 2

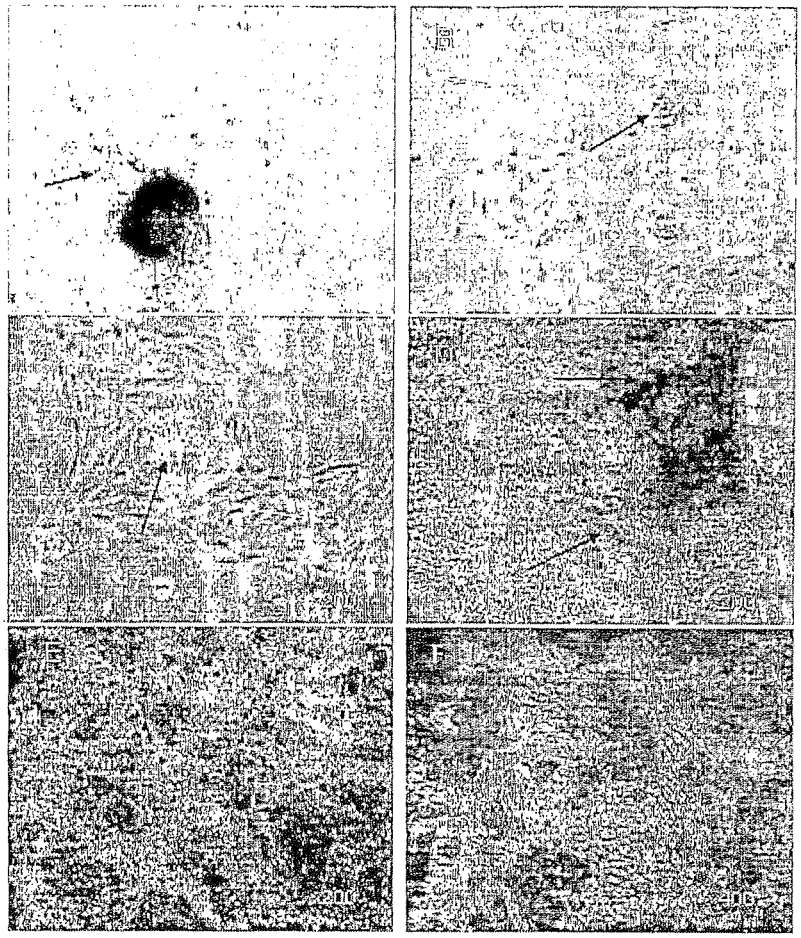


Figure 3

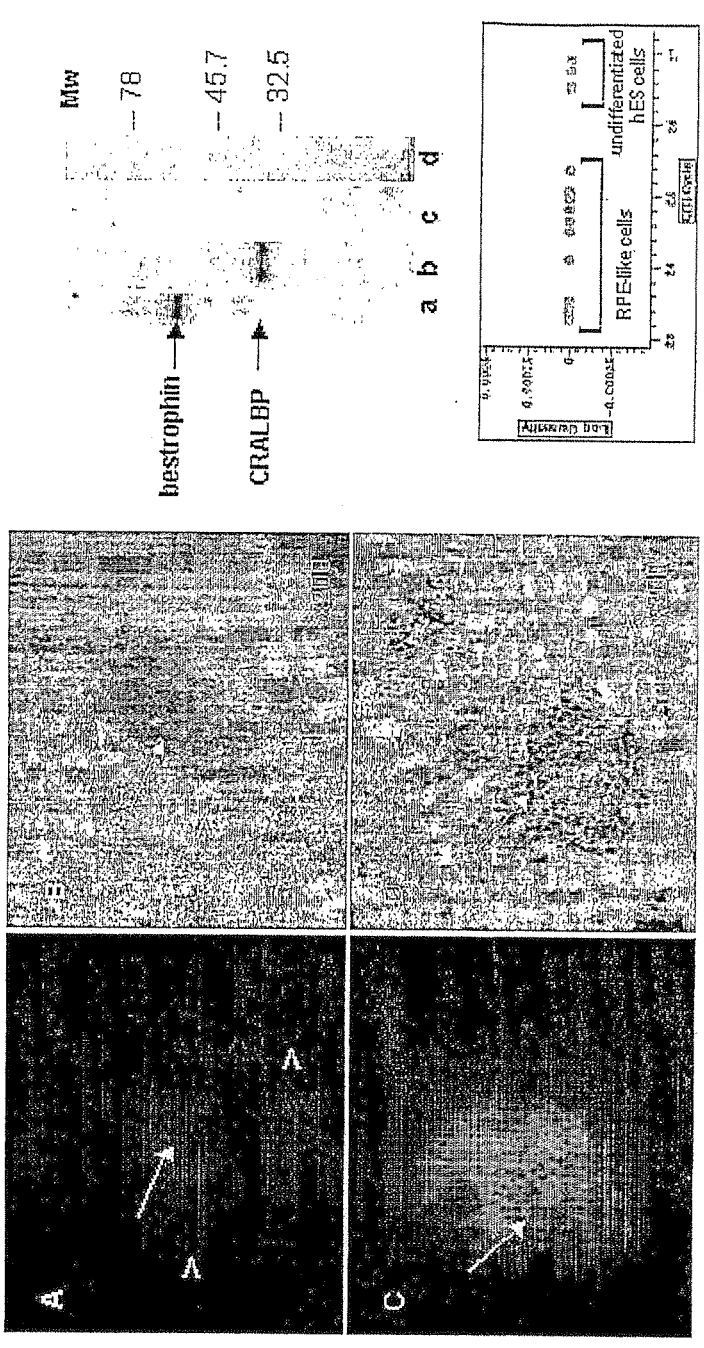

Mw
78
45.7
32.5
bestrophin
CRALBP
a b c d
RPE-like cells
undifferentiated hES cells

Figure 4

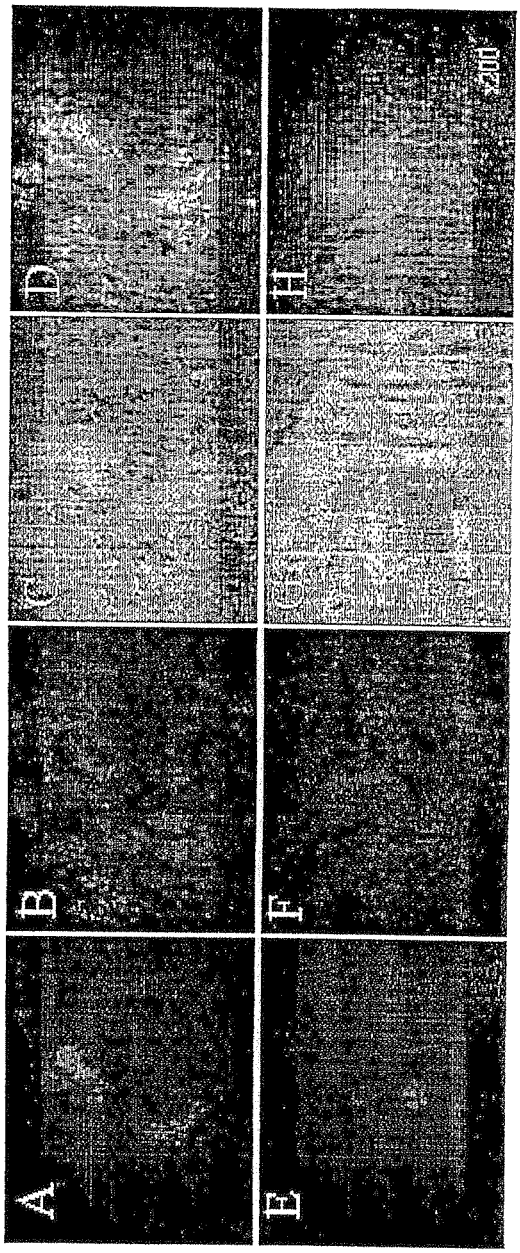


Figure 5

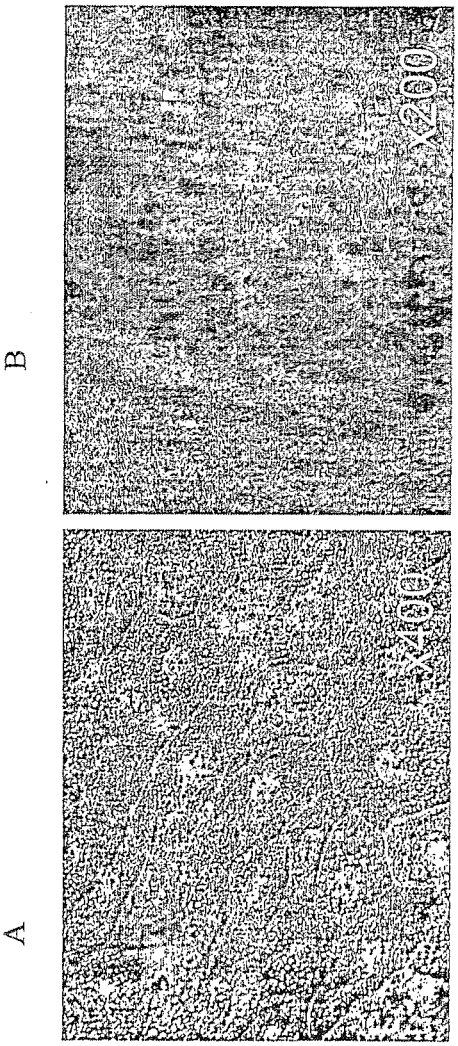


Figure 6A				
Embryonic-RPE	**hES-RPE**	**ARPE-19**	**D407**	**hES-TD**
Bestrophin	Bestrophin	-	-	Bestrophin
Cathepsin D	Cathepsin D	Cathepsin D	Cathepsin D	Cathepsin D
Clusterin-like 1 (retinal)	Clusterin-like 1 (retinal)	-	-	-
-	Cellular retinoic acid biding protein 1	-	-	-
Cystatin C	Cystatin C	Cystatin C	Cystatin C	Cystatin C
Lens intrinsic membrane protein 2, 19kDA	Lens intrinsic membrane protein 2, 19kDA	-	-	-
Lecithin retinol acyltransferase (phosphatidylcholine—retinol O-acyltransferase)	Lecithin retinol acyltransferase (phosphatidylcholine—retinol O-acyltransferase)	-	-	-
Microphthalmia-associated transcription factor	Microphthalmia-associated transcription factor	Microphthalmia-associated transcription factor	Microphthalmia-associated transcription factor	Microphthalmia-associated transcription factor
-	NCAM1	-	-	NCAM1
NCAM2	NCAM2	NCAM2	-	-
Ocular development-associated gene	Ocular development-associated gene	Ocular development-associated gene	Ocular development-associated gene	Ocular development-associated gene
Oculocutaneous albinism II (pink-eye dilution homolog, mouse)	Oculocutaneous albinism II (pink-eye dilution homolog, mouse)	-	-	-
Opsin 3	Opsin 3	Opsin 3	Opsin 3	Opsin 3
-	-	PAX4	-	-

Figure 6B				
Embryonic-RPE	**hES-RPE**	**ARPE-19**	**D407**	**hES-TD**
PAX6	PAX6	PAX6	-	PAX6
PAX8	PAX8	PAX8	PAX8	PAX8
PEDF	PEDF	-		PEDF
Phosducin-like	Phosducin	-	-	-
-	Prominin 1	-	-	-
Retinal G protein coupled receptor	Retinal G protein coupled receptor	-	-	-
Retinal outer segment membrane protein 1	Retinal outer segment membrane protein 1	-	Retinal outer segment membrane protein 1	-
-	Retinal pigment epithelium-derived rhodopsin homolog	-	-	-
-	-	-	-	Rhodopsin
Retinal pigment epithelium-specific protein 65kDa	Retinal pigment epithelium-specific protein 65kDa	-	-	-
Retinaldehyde binding protein 1	Retinaldehyde binding protein 1	-	-	-
Retinol dehydrogenase 5 (11-cis and 9-cis)	Retinol dehydrogenase 5 (11-cis and 9-cis)	-	-	-
SOX10	SOX10			
SOX11	SOX11	-	-	SOX11
SOX12	SOX12	SOX12	SOX12	SOX12
-	-	SOX13	SOX13	-
SOX15	-	-	SOX15	-

Figure 6C				
Embryonic-RPE	**hES-RPE**	**ARPE-19**	**D407**	**hES-TD**
SOX17	SOX17	-	SOX17	-
SOX4	SOX4	SOX4	SOX4	SOX4
SOX9	SOX9	SOX9	-	SOX9
Transthyretin	Transthyretin	-	-	-
-	Visual system homeobox 1 homolog, CHX10-like (zebrafish)	-	-	Visual system homeobox 1 homolog (CHX10-like (zebrafish)
Retriculocalbin 1, EF-hand calcium binding domain	Retriculocalbin 1, EF-hand calcium binding domain	Retriculocalbin 1, EF-hand calcium binding domain	Retriculocalbin 1, EF-hand calcium binding domain	Retriculocalbin 1, EF-hand calcium binding domain
Retriculocalbin 2, EF-hand calcium binding domain	Retriculocalbin 2, EF-hand calcium binding domain	Retriculocalbin 2, EF-hand calcium binding domain	Retriculocalbin 2, EF-hand calcium binding domain	Retriculocalbin 2, EF-hand calcium binding domain
-	-	Reticulon 1	-	-
Reticulon 2	Reticulon 2	Reticulon 2	Reticulon 2	Reticulon 2
Reticulon 3	Reticulon 3	Reticulon 3	Reticulon 3	Reticulon 3
Reticulon 4	Reticulon 4	Reticulon 4	Reticulon 4	Reticulon 4
Retinal short-chain dehydrogenase/reductase 2	Retinal short-chain dehydrogenase/reductase 2	Retinal short-chain dehydrogenase/reductase 2	Retinal short-chain dehydrogenase/reductase 2	Retinal short-chain dehydrogenase/reductase 2
Retinal short-chain dehydrogenase/reductase 3	Retinal short-chain dehydrogenase/reductase 3	Retinal short-chain dehydrogenase/reductase 3	-	Retinal short-chain dehydrogenase/reductase 3

Figure 6D				
Embryonic-RPE	**hES-RPE**	**ARPE-19**	**D407**	**hES-TD**
Retinal short-chain dehydrogenase/reductase 4	Retinal short-chain dehydrogenase/reductase 4	Retinal short-chain dehydrogenase/reductase 4	Retinal short-chain dehydrogenase/reductase 4	Retinal short-chain dehydrogenase/reductase 4
Retinitis pigmentosa 2 (X-linked recessive)	Retinitis pigmentosa 2 (X-linked recessive)	Retinitis pigmentosa 2 (X-linked recessive)	Retinitis pigmentosa 2 (X-linked recessive)	Retinitis pigmentosa 2 (X-linked recessive)
Retinitis pigmentosa GTPase regulator	Retinitis pigmentosa GTPase regulator	Retinitis pigmentosa GTPase regulator	-	-
-	-	Retinitis pigmentosa GTPase regulator interacting protein 1	Retinitis pigmentosa GTPase	-
Retinoblastoma 1 (including osteosarcoma)	Retinoblastoma 1 (including osteosarcoma)	Retinoblastoma 1 (including osteosarcoma)	Regulator interacting protein 1	-
-	-	Retinoblastoma-like 1 (p107)	Retinoblastoma 1 (including osteosarcoma)	Retinoblastoma 1 (including osteosarcoma)
Retinoblastoma binding protein 1	Retinoblastoma binding protein 1	Retinol binding protein 1, cellular	Retinoblastoma-like 1 (p107)	-
Retinoblastoma binding protein 1-like 1	Retinoblastoma binding protein 1-like 1	Retinoblastoma binding protein 1-like 1	Retinoblastoma binding protein 1	Retinol binding protein 1, cellular
Retinoblastoma binding protein 2	Retinoblastoma binding protein 2	Retinoblastoma binding protein 2	Retinoblastoma binding protein 1-like 1	Retinoblastoma binding protein 1-like 1
Retinoblastoma binding protein 4	Retinoblastoma binding protein 4	Retinoblastoma binding protein 4	Retinoblastoma binding protein 2	Retinoblastoma binding protein 2
Retinoblastoma binding protein 5	-	Retinoblastoma binding protein 5	Retinoblastoma binding protein 4	Retinoblastoma binding protein 4

Figure 6E				
Embryonic-RPE	**hES-RPE**	**ARPE-19**	**D407**	**hES-TD**
Retinoblastoma binding protein 6	Retinoblastoma binding protein 6	Retinoblastoma binding protein 6	Retinoblastoma binding protein 5	-
Retinoblastoma binding protein 7	Retinoblastoma binding protein 7	Retinoblastoma binding protein 7	Retinoblastoma binding protein 6	Retinoblastoma binding protein 6
Retinoblastoma binding protein 8	Retinoblastoma binding protein 8	Retinoblastoma binding protein 8	Retinoblastoma binding protein 7	Retinoblastoma binding protein 7
-	Retinoblastoma binding protein 9	-	Retinoblastoma binding protein 8	Retinoblastoma binding protein 8
Retinoblastoma-associated factor 600	Retinoblastoma-associated factor 600	Retinoblastoma-associated factor 600	-	Retinoblastoma binding protein 9
Retinoblastoma-associated protein 140	Retinoblastoma-associated protein 140	Retinoblastoma-associated protein 140	Retinoblastoma-associated factor 600	Retinoblastoma-associated factor 600
Retinoblastoma-like 2 (p130)	Retinoblastoma-like 2 (p130)	Retinoblastoma-like 2 (p130)	Retinoblastoma-associated protein 140	Retinoblastoma-associated protein 140
-	-	Retinoic acid- and interferono-inducible protein (58kD)	Retinoblastoma-like 2 (p130)	Retinoblastoma-like 2 (p130)
-	Retinoic acid induced 1	-	Retinoic acid- and interferono-inducible protein (58kD)	-
-	-	Retinoic acid induced 3	-	Retinoic acid induced 1
Retinoic acid induced 14	Retinoic acid induced 14	Retinoic acid induced 14	Retinoic acid induced 3	Retinoic acid induced 3
Retinoic acid induced 16	Retinoic acid induced 16	Retinoic acid induced 16	Retinoic acid induced 14	Retinoic acid induced 14
Retinoic acid induced 17	Retinoic acid induced 17	Retinoic acid induced 17	Retinoic acid induced 16	Retinoic acid induced 16

Figure 6F				
Embryonic-RPE	**hES-RPE**	**ARPE-19**	**D407**	**hES-TD**
-	Retinoic acid induced 2	-	Retinoic acid induced 17	Retinoic acid induced 17
Retinoic acid receptor responder (tazarotene induced) 2			-	-
-	Retinoic acid receptor responder (tazarotene induced) 3	Retinoic acid receptor responder (tazarotene induced) 3	Retinoic acid receptor responder (tazarotene induced) 3	
Retinoic acid receptor, beta	Retinoic acid receptor, beta	-	Retinoic acid receptor, alpha	Retinoic acid receptor, alpha
-	Retinoic acid receptor, alpha	-	Retinoic acid receptor, beta	Retinoic acid receptor, beta
Retinoic acid repressible protein	Retinoic acid repressible protein	Retinoic acid repressible protein	Retinoic acid repressible protein	Retinoic acid repressible protein
Retinoid X receptor, alpha	Retinoid X receptor, alpha	Retinoid X receptor, alpha	Retinoid X receptor, alpha	Retinoid X receptor, alpha
Retinoid X receptor, beta	Retinoid X receptor, beta	Retinoid X receptor, beta	Retinoid X receptor, beta	Retinoid X receptor, beta
Retinol binding protein 1, cellular	Retinol binding protein 1, cellular	-	-	Retinol binding protein 1, cellular
Retinol dehydrogenase 11 (all-trans and 9-cis)	Retinol dehydrogenase 11 (all-trans and 9-cis)	Retinol dehydrogenase 11 (all-trans and 9-cis)	Retinol dehydrogenase 11 (all-trans and 9-cis)	Retinol dehydrogenase 11 (all-trans and 9-cis)
Retinol dehydrogenase 14 (all-trans and 9-cis)	Retinol dehydrogenase 14 (all-trans and 9-cis)	Retinol dehydrogenase 14 (all-trans and 9-cis)	Retinol dehydrogenase 14 (all-trans and 9-cis)	Retinol dehydrogenase 14 (all-trans and 9-cis)
			-	Retinoschisis (X-linked, juvenile) 1

Figure 6G

Melanin biosynthesis	Retinitis pigmentosa	Vision	Retinol-binding
Dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)	Retinal outer segment membrane protein 1	Retinal outer segment membrane protein 1	Retinal outer segment membrane protein 1
Dopachrome tautomerase (dopachrome delta-isomerase, tyrosine-related protein 2)	c-mer proto-oncogene tyrosine kinase	c-mer proto-oncogene tyrosine kinase	Transthyretin (prealbumin, amyloidosis type I)
Tyrosinase (oculocutaneous albinism IA)	Retinaldehyde binding protein 1	Retinaldehyde binding protein 1	
Silver homolog (mouse)	Retinal G protein coupled receptor	Retinal G protein coupled receptor	
Membrane associated transporter	Retinal pigment epithelium-specific protein 65kDa	Retinal pigment epithelium-specific protein 65kDa	
Membrane associated transporter		Vitelliform macular dystrophy (Best disease, bestrophin)	
		Retinol dehydrogenase 5 (11-cis and 9-cis)	
		Membrane associated transporter	