

Table S5. Protein sequences of mFGFR1 variants and light-activated RTKs.

Name	Sequence
imFGFR1	MGSSKSKPKDPSQRLDMKSGTKKSDFHSMQMAVHKLAKSIPLRRQVTVSAD SSASMNSGVLLVRPSRLSSSGTPMLAGVSEYELPEDPRWELPRDRLVLGK PLGEGCFGQVVLAEIAGLDKDKPNRVTKVAVKMLKSDATEKDLSDLISEME MMKMIGKHKNIINLLGACTQDGPLYVIVEYASKGNLREYLQARRPPGLEICY NPSHNPEEQLSSKDLVSCAYQVARGMEYLASKKCIHRDLAARNVLVTEDNV MKIADFGLARDIHHIDYYKKTNGRLPVKWMapeALFDRIYTHQSDVWSFG VLLWEIFTLGGSPYPGVPVEELFKLLKEGHRMDKPSNCTNELYMMMRDCW HAVPSQRPTFKQLVEDLDRIVALTSNQEYLDLSIPLDQYSPSFPDTRSSTCS SGEDSVFSHEPLPEEPCLPRHPTQLANSGLKRRVETGKLEVEGVQVETISP GDGRTPFKRGQTCVVHYTGMLEDGKKVDSSRDRNKPFKFMLGKQEVIRG WEEGVAQMSVGQRAKLTISPDYAYGATGHPGIIPPHATLVFDVELLKLESG GSGVDYPYDVPDYALD
imFGFR1- ΔFKBP	MGSSKSKPKDPSQRLDMKSGTKKSDFHSMQMAVHKLAKSIPLRRQVTVSAD SSASMNSGVLLVRPSRLSSSGTPMLAGVSEYELPEDPRWELPRDRLVLGK PLGEGCFGQVVLAEIAGLDKDKPNRVTKVAVKMLKSDATEKDLSDLISEME MMKMIGKHKNIINLLGACTQDGPLYVIVEYASKGNLREYLQARRPPGLEICY NPSHNPEEQLSSKDLVSCAYQVARGMEYLASKKCIHRDLAARNVLVTEDNV MKIADFGLARDIHHIDYYKKTNGRLPVKWMapeALFDRIYTHQSDVWSFG VLLWEIFTLGGSPYPGVPVEELFKLLKEGHRMDKPSNCTNELYMMMRDCW HAVPSQRPTFKQLVEDLDRIVALTSNQEYLDLSIPLDQYSPSFPDTRSSTCS SGEDSVFSHEPLPEEPCLPRHPTQLANSGLKRRVETGGSGVDYPYDVPDY ALD
mFGFR1- VfAU1-LOV (Opto- mFGFR1)	MGSSKSKPKDPSQRLDMKSGTKKSDFHSMQMAVHKLAKSIPLRRQVTVSAD SSASMNSGVLLVRPSRLSSSGTPMLAGVSEYELPEDPRWELPRDRLVLGK PLGEGCFGQVVLAEIAGLDKDKPNRVTKVAVKMLKSDATEKDLSDLISEME MMKMIGKHKNIINLLGACTQDGPLYVIVEYASKGNLREYLQARRPPGLEICY NPSHNPEEQLSSKDLVSCAYQVARGMEYLASKKCIHRDLAARNVLVTEDNV MKIADFGLARDIHHIDYYKKTNGRLPVKWMapeALFDRIYTHQSDVWSFG VLLWEIFTLGGSPYPGVPVEELFKLLKEGHRMDKPSNCTNELYMMMRDCW HAVPSQRPTFKQLVEDLDRIVALTSNQEYLDLSIPLDQYSPSFPDTRSSTCS SGEDSVFSHEPLPEEPCLPRHPTQLANSGLKRRVETGPDYSLVKALQMAQ QNFVITDASLPDNPVYASRGFLTLTGYSLDQILGRNCRFLQGPETDPRAVD KIRNAITKGVDTSVCLLNRYRQDGTTFWNLFFVAGLRDSKGNIVNYVGVQSK

	VSEDYAKLLVNEQNIEYKGVRTSNMLRRKTGGSGVDYPYDVPDYALD
p75-hEGFR- VfAU1-LOV (Opto-EGFR)	MGAGATGRAMDGPRLLLLLLGVSLGGAKEACPTGLYTHSGECCKACNLG EGVAQPCGANQTVCEPCLDSVTFSDVVSATEPCKPCTECVGLQSMSAPCV EADDAVCRCAYGYQDETTGRCEACRVCEAGSGLVFSCQDKQNTVCEEC PDGTYSDEANHVDPCLPCTVCEDTERQLRECTRWADAEECEIPGRWITRS TPPEGSDSTAPSTQEPEAPPEQDLIASTVAGVTTVMGSSQPVVTRGTTDN LIPVYCSILAAVVVGLVAYIAFKRGRARRRHIVRKRTLRRLLQERELVEPLTP SGEAPNQALLRILKETEFKKIKVLGSGAFGTVYKGLWIPEGEKVKIPVAIKEL REATSPKANKEILDEAYVMASVDNPHVCRLLGICLTSTVQLITQLMPFGCLL DYVREHKDNIGSQYLLNWCVQIAKGMNYLEDRLVHRDLAARNVLVKTPO HVKITDFGLAKLLGAEKEYHAEGGKVPKWMMALESILHRIYTHQSDVWSYG VTWELMTFGSKPYDGIPASEISSILEKGERLPQPPICTIDVYMIMVKCWMID ADSRPKFRELIIEFSKMARDPQRYLVIQGDERMHLPSPTDSNFYRALMDEE DMDDVDADEYLIPQQGFFSSPSTSRTPLLSSLSATSNNSTVACIDRNLQ SCPIKEDSFLQRYSSDPTGALTEDSIDDTFLPVPEYINQSVPKRPAGSVQNP VYHNQPLNPAPSRDPHYQDPHSTAVGNPEYLNTVQPTCVNSTFDSPAHW AQKGSHQISLDNPDYQQDFFPKEAKPNGIFKGSTAENAAYLRVAPQSSEFI GASGGPDYSLVKALQMAQQNFVITDASLPDNPVIVYASRGFLTLTGYSLDQIL GRNCRFLQGPETDPRAVDKIRNAITKGVDTSVCLLNRYRQDGTTFWNLFFVA GLRDSKGNIVNYVGVQSKVSEDYAKLLVNEQNIEYKGVRTSNMLRRKPGG SGVDYPYDVPDYALD
hRET- VfAU1-LOV (Opto-hRET)	MGSSKSKPKDPSQRLDVTGHCYHKFAHKPPISSAEMTFRRPAQAFVPSYS SSSARRPSLDSMENQVSVDAFKILEDPKWEFPRKNLVLGKTLGEGEFKVV KATAFHLKGRAGYTTVAVKMLKENASPSELRDLLSEFNVLKQVNHPHVIKLY GACSQDGPLLLIVEYAKYGSLRGFLRESRKVGPYLGSGGSRNSSSLDHP DERALTMGDLISFAWQISQGMQYLAEMKLVHRDLAARNILVAEGRKMKISD FGLSRDVYEEDSYVKRSQGRIPVKWMAIESLFDHIYTTQSDVWSFGVLLWE IVTLGGNPYPGIPPERLFNLLKTGHRMERPDNCSEEMYRLMLQCWKQEPD KRPVFADISKDLEKMMVKRRDYLDLAASTPSDSLIIYDDGLSEEETPLVDCNN APLPRALPSTWIENKLYGRISHAFTRFTGGPDYSLVKALQMAQQNFVITDAS LPDNPVIVYASRGFLTLTGYSLDQILGRNCRFLQGPETDPRAVDKIRNAITKGV DTSVCLLNRYRQDGTTFWNLFFVAGLRDSKGNIVNYVGVQSKVSEDYAKLLV NEQNIEYKGVRTSNMLRRKPGGSGVDYPYDVPDYALD