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| --- | --- | --- | --- | --- |
| Gene, exon and control | Splicing inclusion in prostate | Protein Function | Function of splice | References |
| CTTND1  ESRP2 represses exon 2 and 3 inclusion | Not differentially spliced in tumours, but exon 2 and 3 splicing reduced time to biochemical recurrence | May activate WNT signalling through binding transcriptional repressor ZBTB33, and may bind and regulate adhesion properties of cadherins. |  | ([Schackmann et al., 2013](#_ENREF_76)) |
| *ENAH*  ESRP2 activates exon 11A  inclusion | More splicing inclusion in tumour (better prognosis isoform) | ENAH controls actin nucleation and polymerisation, modulating cell motility and adhesion | ENAH exon 11A inclusion produces an isoform called MENAα prognostic for patient survival in lung cancer | ([Bria et al., 2014](#_ENREF_10); [Urbanski et al., 2018](#_ENREF_85)) |
| *FLNB*  ESRP2 activates exon 30 inclusion  (also QKI and RBFOX-regulated) | Not differentially spliced in tumour versus normal (but exon 30 included form better prognosis) | Connects cell membrane to actin cytoskeleton and promotes orthogonal branching of actin filaments | Skipping of exon 30 removes H1 domain from FLNB protein, and is correlated with EMT by releasing the FOXC1 transcription factor | ([Feng et al., 2004](#_ENREF_21); [Li, Choi, Chaffer, Labella, Hwang, Giacomelli, Kim, Ilic, Doench, Ly, Dai, Hagel, Hong, Gjoerup, Goel, Ge, Root, Zhao, Brooks, Weinberg, & Hahn, 2018](#_ENREF_45)) |
| *ITGAG*  ESRP2 activates exon 25 | More skipping in tumour (exon 25 skipped isoform poorer prognosis) | Membrane protein that functions in signalling and adhesion | ITGA6 splice isoforms encode different C termini proteins that regulate different intracellular signalling pathways | ([Groulx, Giroux, Beausejour, Boudjadi, Basora, Carrier, & Beaulieu, 2014](#_ENREF_29)) |
| *MAP3K7*  ESRP2 activates exon 12 inclusion | More splicing inclusion in tumour (better prognosis isoform) | Serine/threonine protein kinase that mediates TGFβ and BMP signalling, and controls transcription and apoptosis. *MAP3K7* deleted in 30-40% of prostate tumours, and is associated with a poor clinical prognosis. | Full length Map3K7 promotes TGFβ-mediated apoptosis. Map3k12Δexon12 isoform supports EMT and is expressed in metastatic cell lines | ([Goodall, Fitzwalter, Zahedi, Wu, Rodriguez, Mulcahy-Levy, Green, Morgan, Cramer, & Thorburn, 2016](#_ENREF_26); [Kluth, Hesse, Heinl, Krohn, Steurer, Sirma, Simon, Mayer, Schumacher, Grupp, Izbicki, Pantel, Dikomey, Korbel, Plass, Sauter, Schlomm, & Minner, 2013](#_ENREF_41); [W. Liu, Chang, Cramer, Koty, Li, Sun, Turner, Von Kap-Herr, Bobby, Rao, Zheng, Isaacs, & Xu, 2007](#_ENREF_47); [Tripathi, Shin, Stuelten, & Zhang, 2019](#_ENREF_82); [Wu, Shi, Cimic, Romero, Sui, Lees, Cline, Seals, Sirintrapun, McCoy, Liu, Kim, Hawkins, Peehl, Xu, & Cramer, 2012](#_ENREF_99)) |
| *RAC1*  ESRP2 activates exon 3b (also regulated by hnRNPA1 and SRPKs) | More splicing inclusion in tumour (better prognosis isoform) | RAS superfamily small GTPase | Exon 3b skipping promotes cell mobility | ([F. Wang et al., 2017](#_ENREF_93)) |
| SLK  ESRP2 activates exon 13  (also regulated by RBFOX2) | More exon 13 splicing inclusion in tumour (better prognosis isoform) | STE20-like serine/threonine-protein kinase | Exon 30 encodes part of the PKK (polo kinase kinase) domain | ([Braeutigam et al., 2014](#_ENREF_9)) |
| TRIP10 ESRP2 activates exon 10 | Not differentially spliced in tumour versus normal (but exon 10 spliced isoform better prognosis) | thyroid hormone receptor interactor 10  controls actin cytoskeleton Role in cancer metastasis | Exon 10 within CDC42 interacting domain | ([Truesdell et al., 2015](#_ENREF_83)) |

Figure 5 – Source Data 2