

Table 2. Activin signaling as therapeutic intervention

Disease	Therapeutic strategy	Methods	Ref
Muscular dystrophy Muscle atrophy	Increase of muscle mass by myostatin inhibition	Monoclonal MSTN Ab MSTN propeptide Soluble ActRIIB-Fc Follistatin and its derivatives HDAC inh MSTN siRNA	[60, 65, 72] [62, 63, 64] [63, 70] [66, 67, 73, 116] [113] [117]
Osteoporosis	Increase of bone mass by activin inhibition	Soluble ActRIIA-Fc Inhibin A	[78] [79]
Cancer			
suppression of tumor growth	Activin activation	Cripto silencing FLRG silencing	[81] [82]
cachexia	Activin inhibition Myostatin inhibition	Soluble ActRIIA-Fc Follistatin, MSTN propeptide	[88] [115]
metastasis	Activin inhibition	Follistatin	[90]
suppression of motility and angiogenesis	TGF- β /activin inhibition	Kinase inhibitors for ALK4,5,7	[89, 91, 92, 94]
Neuron damage Depression	Activin application	Recombinant activin	[102, 103, 104, 108]

Abbreviations: MSTN, myostatin; HDAC inh, histone deacetylase inhibitor