そして，血管内皮増殖因子(VEGF)の発現誘導剤GS4012の治療効果を示し，簡便なALSモデルとして薬効評価においても有用であることを示した．

おわりに

以上に述べたように，世界中でショウジョウバエ，線虫，ゼブラフィッシュなどの小動物を用いたTAR DNA-binding protein 43(TDP-43)，fused in sarcoma(FUS)，superoxide dismutase 1(SOD1)がかかわるALSモデルが開発され，病態解明，治療法開発を目指した研究が現在進行中である．本稿で紹介したように，TDP-43, FUSの機能類似性から両者の相互関係について遺伝学的解析が行われているが，FALSの新たな原因遺伝子として*Optineurin*, *VCP*, *Ubiquilin-2*, *C9ORF72*などが最近次々と発見されており，マウスモデルでは困難な多数の遺伝子間の相互作用解析を小動物モデルを用いて行い，さまざまな筋萎縮性側索硬化症(ALS)に共通の発症分子メカニズムが解明されることが期待される．また，特定の遺伝子だけではなく，これら小動物モデルの最大の特徴を生かした網羅的な遺伝学的スクリーニングによりALS病態にかかわる遺伝子群を同定して未知の分子機序が明らかになることも期待される．さらに小動物モデルを用いた大規模な治療薬スクリーニングにより治療薬候補を同定することも可能である．今後，小動物モデルを用いたハイスループット解析により，ALSの病態解明，治療法開発研究がますます進展することが期待される．

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