Supplementary Table S1. PubMed search strategies and retrieval yields

Database: PubMed. Publication date range: 1 January 2015 to 6 September 2026. Language restriction: English. Deduplication procedure: Across the 13 PubMed searches, 3,083 records were retrieved. After removal of 622 duplicate records using PMIDs, 2,461 unique records remained. No article-type filter was applied at the database-search stage.

Search category	Exact PubMed search string	Search field(s)	Date range	Filters	Records retrieved
Primary - Alzheimer's disease	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields]) AND ("Alzheimer Disease"[MeSH Terms] OR "Alzheimer's disease"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields + MeSH Terms	2015-01-01 to 2026-09-06	English; no article-type filter	304
Primary - Parkinson's disease	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields]) AND "Parkinson's disease"[All Fields] AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	109
Primary - Motor neuron disease / ALS	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF-I"[All Fields]) AND ("motor neuron disease"[All Fields] OR "amyotrophic lateral sclerosis"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	50
Primary - Huntington's disease	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND ("Huntington Disease"[MeSH Terms] OR "Huntington's disease"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields + MeSH Terms	2015-01-01 to 2026-09-06	English; no article-type filter	24
Primary - Broader neurodegenerative disease	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND ("neurodegenerative disease"[All Fields] OR "neurodegenerative diseases"[All Fields] OR "neurodegeneration"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	410
Supplementary - PI3K/Akt	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND ("PI3K/Akt"[All Fields] OR "PI3K-Akt"[All Fields] OR "PI3K Akt"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	1174
Supplementary - Neuroinflammation	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND "neuroinflammation"[All Fields] AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	238
Supplementary - Autophagy	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND "autophagy"[All Fields] AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	469
Supplementary - Blood-brain barrier	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND ("blood-brain barrier"[All Fields] OR "blood brain barrier"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	103
Supplementary - PTEN	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND "PTEN"[All Fields] AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	163
Supplementary - SHIP2	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND ("SHIP2"[All Fields] OR "INPPL1"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	2
Supplementary - Intranasal delivery	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND ("intranasal delivery"[All Fields] OR "intranasal administration"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	28

Search category	Exact PubMed search string	Search field(s)	Date range	Filters	Records retrieved
Supplementary - Nanocarrier	("Insulin-like Growth Factor-1"[All Fields] OR "IGF-1"[All Fields] OR "IGF1"[All Fields]) AND ("nanocarrier"[All Fields] OR "nanocarriers"[All Fields]) AND english[lang] AND ("2015/01/01"[PDAT] : "2026/09/06"[PDAT])	All Fields	2015-01-01 to 2026-09-06	English; no article-type filter	9