N-3-Hydroxyphenyl Alkanamide for Epileptic Seizure Management

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This research, conducted during a paid summer internship through ACS Project SEED, focused on synthesizing and analyzing N-3-HPA for their potential use in seizure management. To develop efficient drug delivery systems, gel synthesis was carried out, producing 3PhOH12, 3PhOH14, and 3PhOH16, with the alkane chain length increasing in each synthesis. The synthesis process was repeated three times, and the compounds were analyzed using infrared spectrophotometry and differential scanning calorimetry to assess functional groups and thermal properties. Further research identified structural similarities between N-3-HPA and compounds such as capsaicin, dopamine, and vanillin, all known for their anticonvulsant effects. Given dopamine's role in easing epileptic seizures, N-3-HPA shows promise as potential treatments for epilepsy. Computational docking using SwissDock software predicted favorable interactions between 3PhOH12 and the D2 dopamine receptor (6VMS). This study contributes to the understanding of N-3-Hydroxyphenyl Alkanamides and their potential as a therapeutic approach for seizure relief.

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