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### **Lipid based nanosystem designed for nose to brain delivery of Alzheimer Disease Drug**

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Alzheimer's disease (AD) has been ranked as the most dangerous and prevalent neurodegenerative disease worldwide accompanied by the absence of a fully effective anti-AD medication tightly due to the presence of the blood-brain barrier (BBB). Nose-to-Brain delivery enhances the ability of some drugs to bypass the BBB achieving a therapeutic concentration directly in the brain especially for those with low brain concentrations after a routine delivery. Since the inflammatory process is involved in the pathogenesis of AD and the association of meloxicam with antioxidant properties, the latter could be used in AD management. Unfortunately, poor permeability across the BBB limits its use for the treatment of neurodegenerative disorders in addition to the high rate of plasma protein binding and low apparent distribution volumes. Encapsulation of meloxicam in lipid based nanocarriers, particularly solid lipid nanoparticles (SLN) could be promising for nose to brain delivery due to their biocompatibility, protecting the therapeutic load, while improving its interaction with the olfactory regions.

#### References

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