

ItPS  
Seminars

17<sup>th</sup> Nov  
2023 2pm CEST



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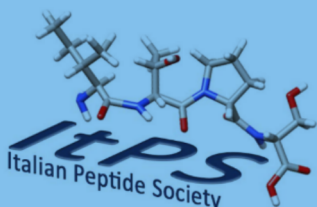
**Strategy for side reaction and  
impurities control in therapeutic  
peptide chemistry**

**MARCO CARRARO**  
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**Comparison between the purification  
strategies in preparative HPLC for  
the purification of therapeutic peptides**



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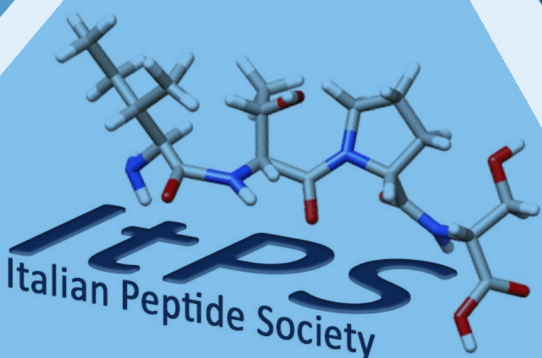
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**Comparison between the purification strategies in preparative HPLC for the purification of therapeutic peptides**

The increased interest in therapeutic peptides generated a strong interest towards the purification procedures, particularly due to their relevant impact on the manufacturing costs.

The main impurities associated with a peptide are often very similar respect to the target molecule (e.g. diastereomers), particularly if manufactured through Solid Phase Peptide Synthesis (SPPS). The current feasible approaches for their purification are related to preparative liquid chromatography, the only technique able today to reach the purity specification required by the regulatory authorities. Different approaches of chromatography at preparative scale are reviewed in this presentation, showing a case study occurred in our laboratory.



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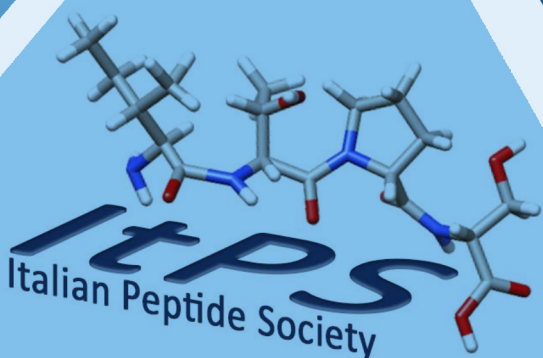
# ItPS Seminars

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## Strategy for side reaction and impurities control in therapeutic peptide chemistry

Peptides drug market is a field in rapid growth in recent years. Industrial manufacturing of peptides is largely performed using the solid phase peptide synthesis approach (SPPS). The challenge for the industry is the generation of a product at multigram to Kg scale aligned with the always more stringent market requirements in terms of quality and impurities control. Structural and stereo isomerism is a crucial step in the generation of peptide drug related impurities often very difficult to remove through the current chromatographic techniques. In this presentation two example peptide drugs related impurities will be investigated and the troubleshooting applied to overcome their generation will be shown.



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