

医学研究

抗肿瘤药物顺铂和血清白蛋白的相互作用研究

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摘要

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Study on Interactions between Anticancer Drug Cisplatin and Human Serum Albumin

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Abstract Cisplatin is a widely used anticancer agent to treat solid tumours such as ovarian, testicular cancers. The interaction of platinum drugs with human albumin is an important issue that contributes to understanding the transport process of platinum drugs, cell uptake and their side-effects. Here, we applied a bottom-up proteomic approach to study the interaction of cisplatin with recombinant human albumin(rHA). The cisplatin-rHA complexes were prepared under physiological conditions in vitro at different cisplatin/rHA molar ratios for different incubation times. LC/MS analysis enables to identify four platinated peptides and further MS/MS analysis characterizes the platinum binding sites. The results show that cisplatin binds to His67, His128, His247 and Met298 residues in albumin involving an intramolecular crosslinking of His67 to His247 by platinum. Besides, cisplatin is shown to induce the cleavage of the disulfide bond Cys124-Cys169 of albumin and bind to the thiol in the reduced Cys124 residue.

Key words [human](#) [serum](#) [albumin](#) [_](#) [cisplatin](#) [_](#) [interaction](#) [_](#) [LC-MS/MS](#)

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