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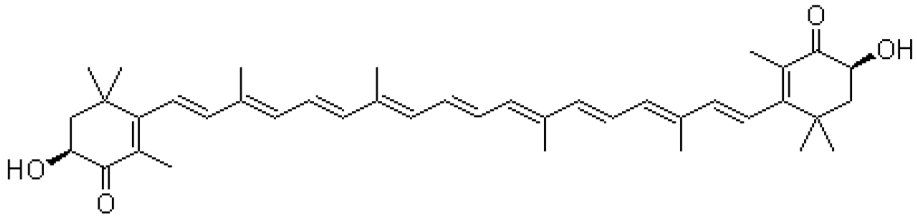
Effects of Astaxanthin on Oxidative Stress Induced by Cu^{2+} in Prostate Cells

Key words: Oxidative stress; PC-3; RWPE-1; AST; Copper ion

Research Summary

- **Can copper ion lead to prostate cell injuries?**
- **As a excellent antioxidant, can AST protect prostate cells from oxidative damage induced by Cu^{2+}?**
- **What is the mechanisms?**

- Copper ion induced apoptosis in RWPE-1 and PC-3 cells.
- AST treatments could decrease the MDA levels, increase MMP and keep ROS stable in RWPE-1 cells.
- AST treatments could decreased the SOD, GSH-Px and CAT activities in PC-3 cells treated with Cu^{2+}, but had a contrary reaction in RWPE-1 cells.



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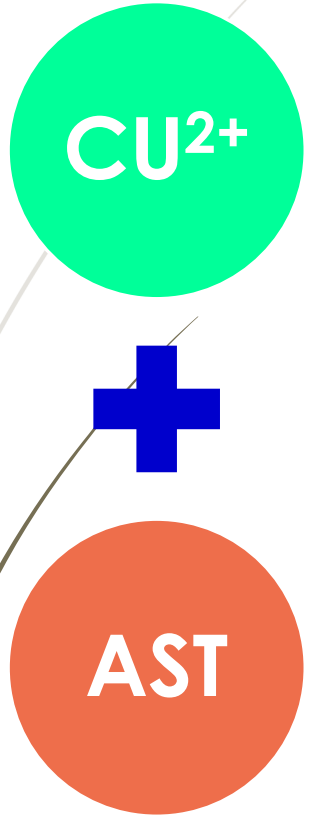
Innovation points



- Normal prostate cell: AST inhibit Cu^{2+}-induced oxidative stress by scavenging ROS, restoring MMP and increasing antioxidant enzyme activity.
- Prostate cancer cell: AST accelerated the damage induced by Cu^{2+} by decreasing activities of CAT, GSH-Px and CAT.
- Significant: AST might be potential for protecting normal prostate cells from oxidative damage while releasing Cu^{2+}-induced toxicity in prostate cancer.

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