Action of the Epigallocatechin-3-gallate (EGCG) on the inflammation on tenocytes culture


Abstract
The Epigallocatechin-3-gallate (EGCG) is the most important compound of the green tea. This study analyzed tenocytes in vitro inflammed with TNF-α focusing the activity of metalloproteinases (MMP)-2, -8, and -9. On the medium cell, groups treated with EGCG showed lower quantites of MMP -2 and -9. Tenocyte zymography demonstrate presence of MMP -2, -8 and -9 in treated and non-treated groups. Nevertheless, inflammed groups display larger quantities of those MMPs. This study indicate improvement on the inflammatory process in groups treated with EGCG.

Key words: Green tea, Metalloproteinases, TNF-α

Introduction
Tendons are connective tissues with few cells and poor vascularization. During an inflammatory process, there are an increase of the MMP-2 and -9 activity. MMPs are responsible for degradation and remodeling of the extracellular matrix. In this study, we investigate the effect of EGCG in culture of tenocytes subjected to an inflammatory process by TNF-α, considering mostly its effects on the MMPs activity.

Results and Discussion
For better understanding the effects of EGCG on inflammatory process induced by TNF – α, a zymography process was made and analyzed.

The zymography gels were made with samples of tenocytes and their medium.

Table 1. Groups.

<table>
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<th>Control</th>
<th>E treated with EGCG for 24 hours</th>
<th>T24 Infamed with TNF-α for 24 hours and treated with EGCG for 24 hours</th>
<th>I48 Infamed with TNF-α for 48 hours</th>
<th>T48 Infamed with TNF-α for 48 hours and treated with EGCG for 48 hours</th>
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Cellular Migration was tested. The results are being analyzed.

Conclusions
The EGCG has an reverse effect on inflammatory process induced by TNF – α. Medium cell of groups treated with EGCG showed lower presence of MMP-9 and active MMP-2. Inflamed tenocytes show higher amount of MMP-9, -8 and inactive MMP-2.

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