# DESMIN EXPRESSION AS A MARKER OF CARDIOMYOCYTE CYTOSKELETAL DAMAGE UNDER CARBON MONOXIDE EXPOSURE

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**Relevance**. Desmin is an intermediate filament protein that maintains the structural integrity of cardiomyocytes and supports the spatial organization of myofibrils. Changes in desmin expression may reflect the severity of cytoskeletal damage in the myocardium under hypoxic-toxic conditions.

**Aim of the study.** Was to assess desmin expression in the myocardium of white outbred rats after carbon monoxide exposure and correction with milk thistle and safflower extracts.

**Materials and methods.**

The study was performed on 6- and 18-month-old white outbred rats. Immunohistochemical staining was used to detect desmin expression in cardiomyocytes. The percentage of desmin-positive cells and staining intensity were evaluated semi-quantitatively.

**Results.**

In the control group, desmin expression was high: 92.4% in 6-month-old rats and 86.7% in 18-month-old rats. After carbon monoxide exposure, desmin-positive cardiomyocytes decreased to 34.7% in 6-month-old rats and to 12.3% in 18-month-old rats. Simultaneous correction with milk thistle and safflower extracts preserved desmin

expression more effectively, reaching 78.6% in 6-month-old and 64.2% in 18-month-old animals. Post-exposure correction showed a weaker effect.

**Conclusion.**

Desmin expression is a sensitive marker of carbon monoxide-induced myocardial cytoskeletal injury. Early correction with plant extracts provides better preservation of cardiomyocyte structural integrity.