

# The body distribution and elimination of Iodine-125 labeled irisin in 10-week-old rats – preliminary data.

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## INTRODUCTION:

**IRISIN** is a recently discovered peptide secreted by muscle and fat tissue that has significant influence on the body metabolism and thermogenesis. Irisin promotes a “browning” of subcutaneous white adipose tissue causing increased energy expenditure and heat production. Irisin may be potentially associated with the health-promoting role of physical exercises. Available data about this peptide is still insufficient.

## AIM:

The aim of the study is to provide some initial information about **body distribution and elimination of irisin** in rats.

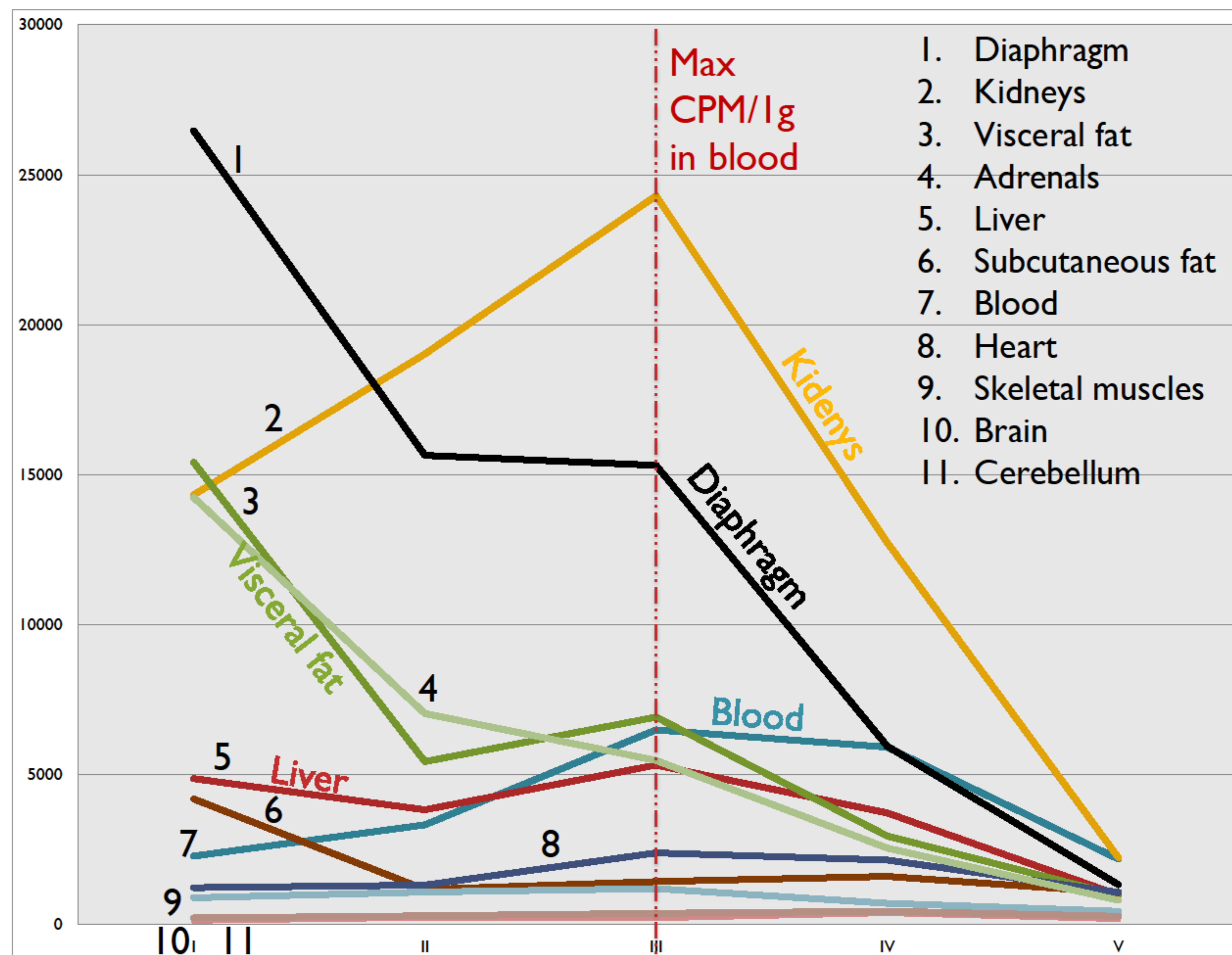
## METHODS:

The studied group consisted of 27 10-week-old female Wistar rats, which received intraperitoneally approximately 0,7 mCi of Iodine-125 labeled irisin. The studied rats were divided on 5 subgroups: Six were decapitated after 15 minutes, (I) 5 after 30 minutes, (II) 1 hour (III) and 2,5 hours (IV) and last 6 after 5 hours (V). The samples from blood, kidneys, liver, subcutaneous and visceral fat, heart, skeletal muscles, diaphragm, adrenals, brain and cerebellum were taken, scaled and the radiation was measured (CPM - counts per minute). The same procedure was applied for 5 rats which received only saline intraperitoneally – control group.

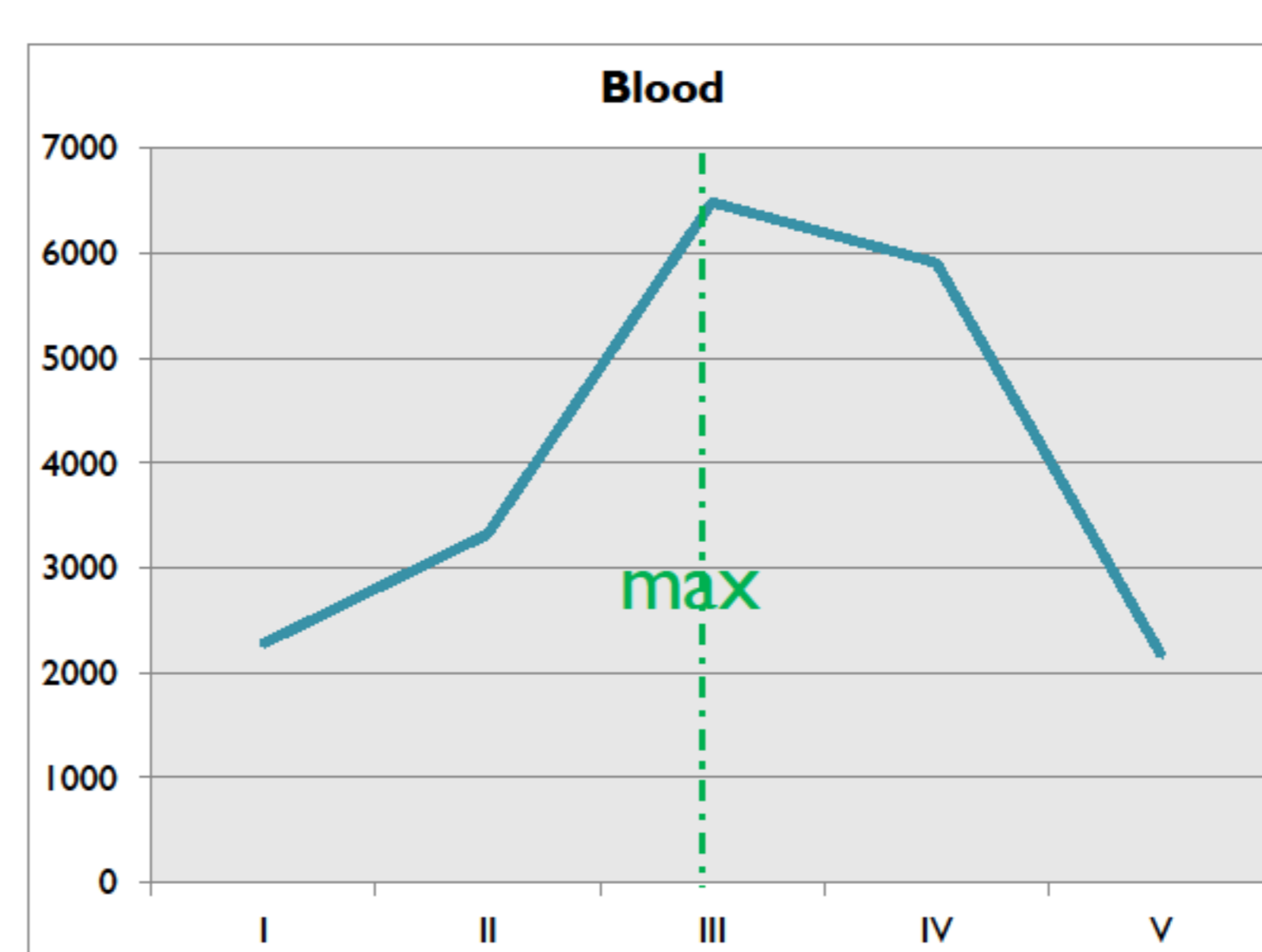
## RESULTS:

The maximum radiation (CPM /Ig) in the blood was registered 1 hour after the injection. At that moment the highest radiation was detected in **kidneys**. After 1 hour the maximum radiation was registered also in liver, heart and skeletal muscles. In case of brain and cerebellum the maximum point was depicted after 2.5 hours. The diaphragm, subcutaneous fat, visceral fat and adrenals presented very high radiation just after the injection, which decreased rapidly with time. At every point of the study the studied group tissue radiation was significantly higher than in the control group (P<0.05).

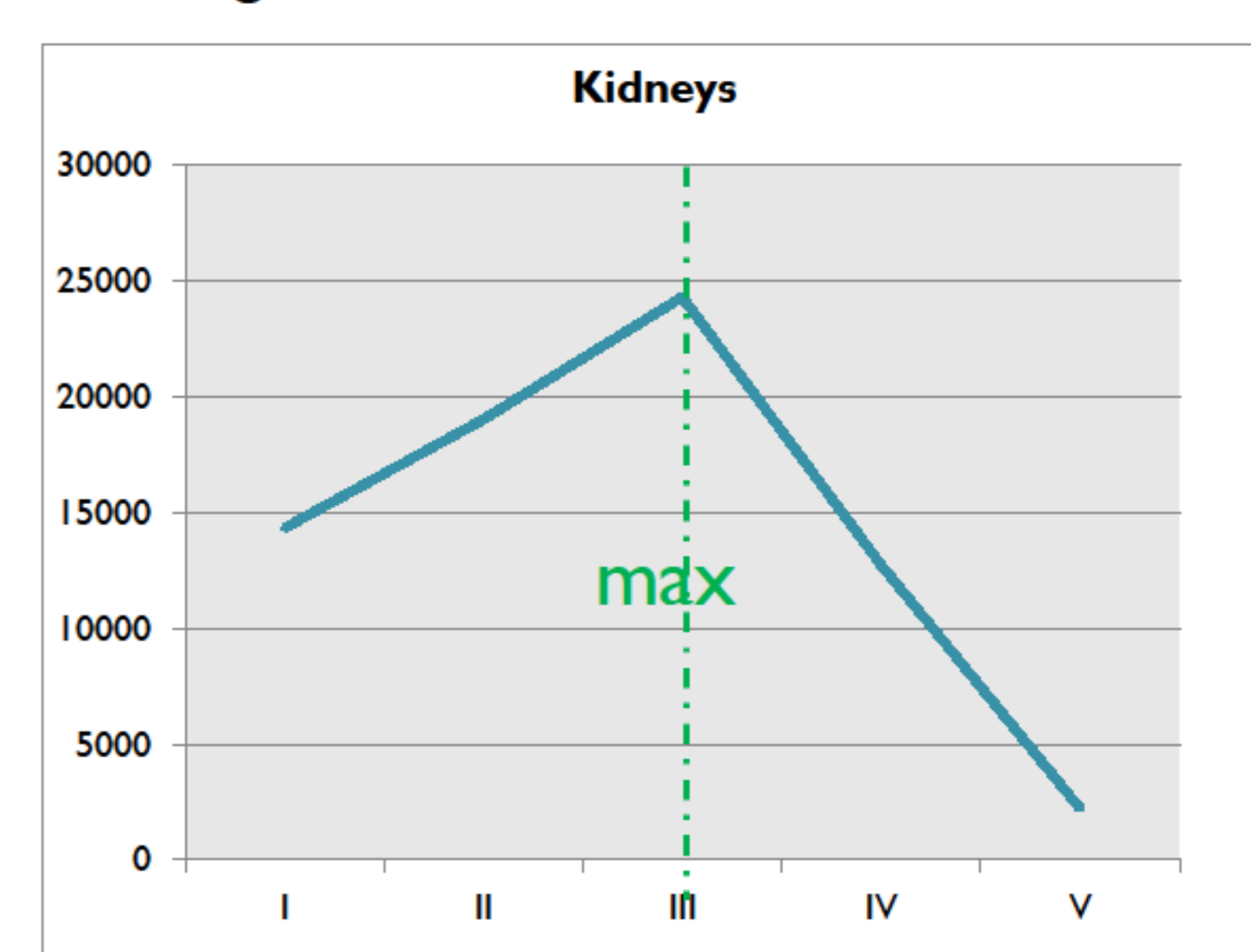
CPM/Ig



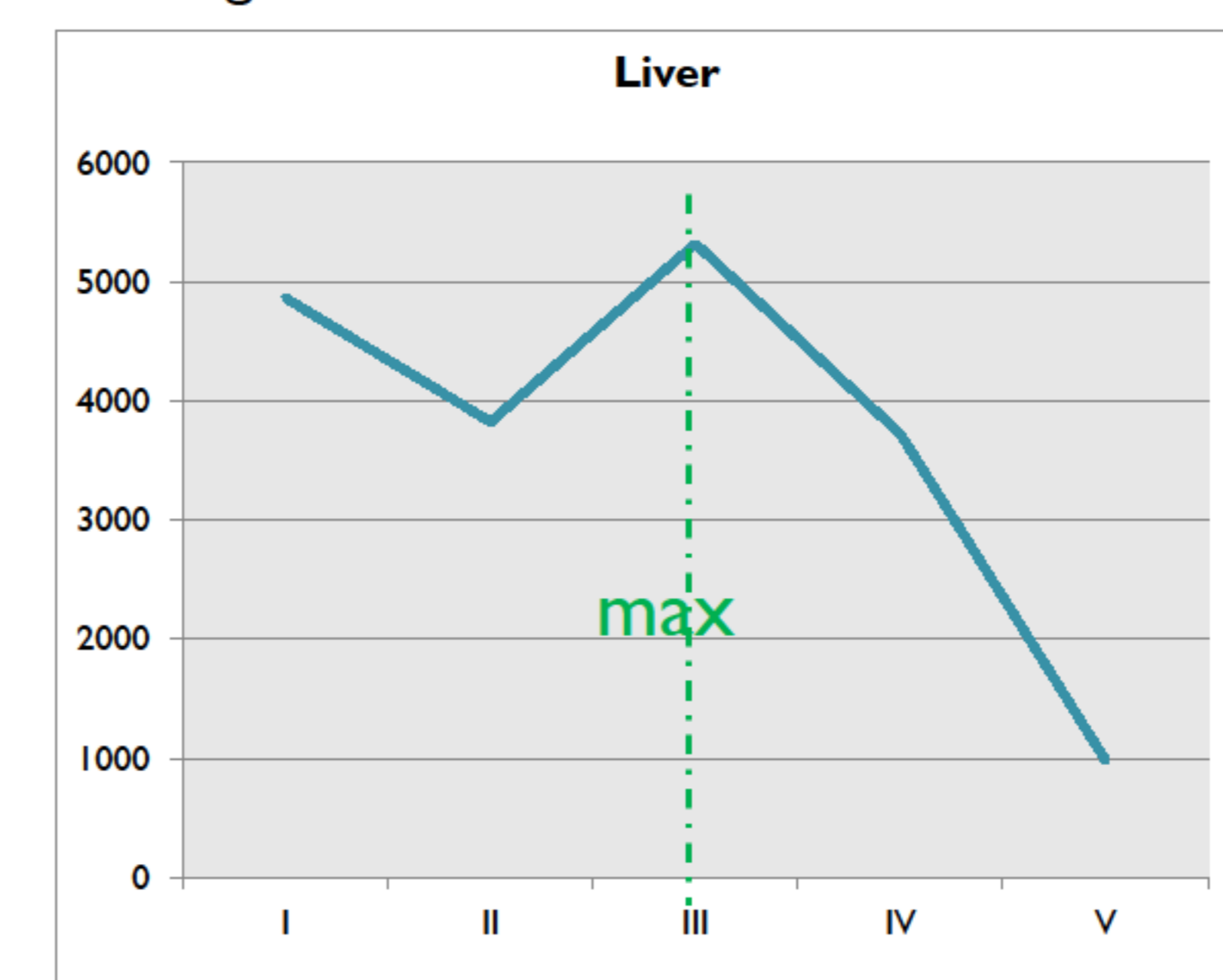
CPM/Ig



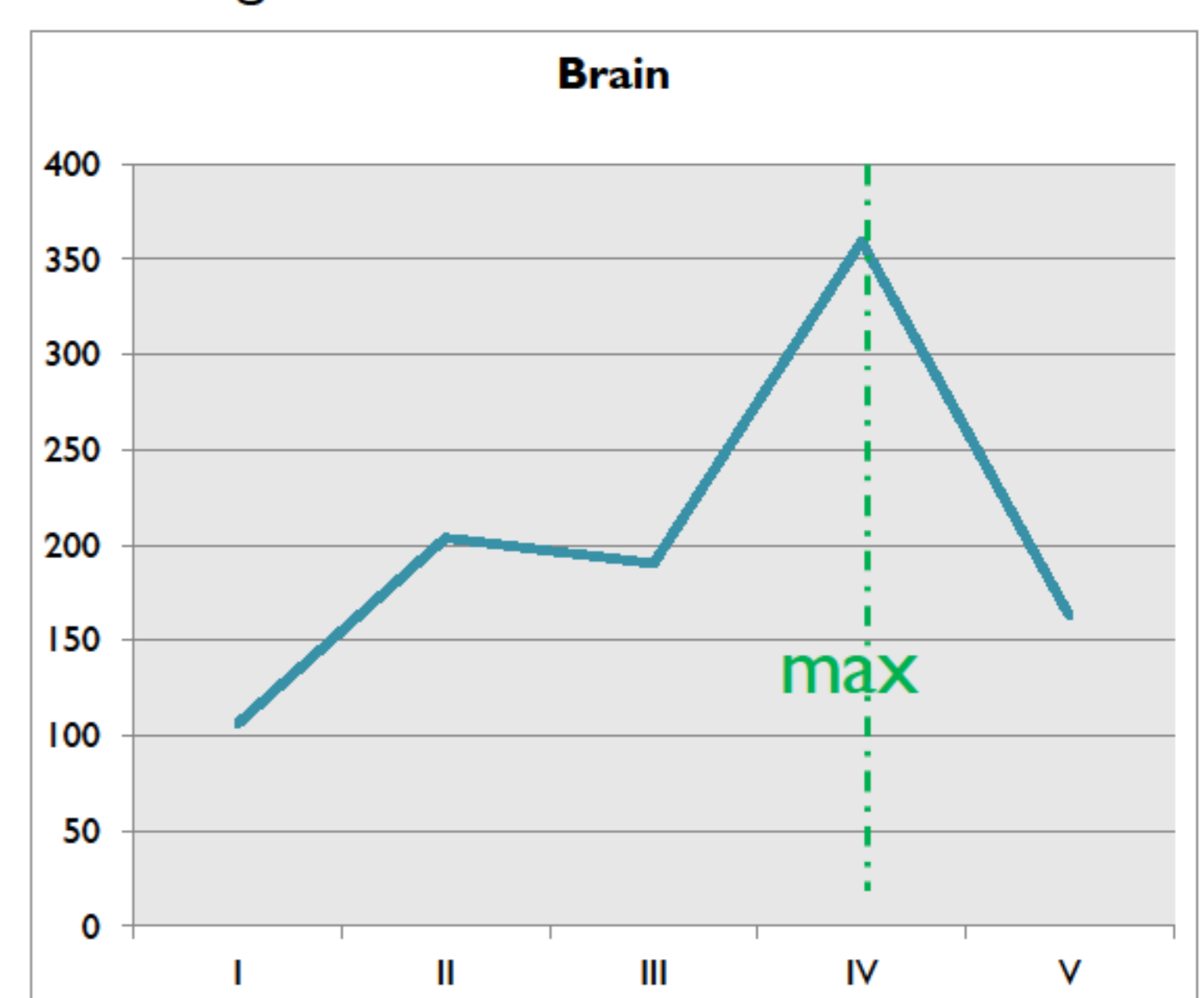
CPM/Ig



CPM/Ig



CPM/Ig



## CONCLUSIONS:

It may be assumed that intraperitoneally injected irisin has a **standard distribution** associated with **blood perfusion and crosses the blood—brain barrier**. There is no specific accumulation in described organs. The kidneys appear to be the main elimination route of irisin. The initial high radiation of diaphragm, subcutaneous fat, visceral fat and adrenals may be associated with the place of injection, thus is not reliable.

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