



GADOLINIUM/GBCA DEPOSITION AND RETENTION IN OTHER ORGANS

Localization, Kinetics and Form involved in Gd Retention
A GBCAs Comparison

Conflicts of Interest

Guerbet employee.

Evidence of Presence of Gadolinium in Various Tissues

Brain

Xia et al. 2010
McDonald et al. 2015
Kanda et al. 2015 (...)

Eyes

Barker-Griffith et al. 2010

Liver, lung, kidney, heart

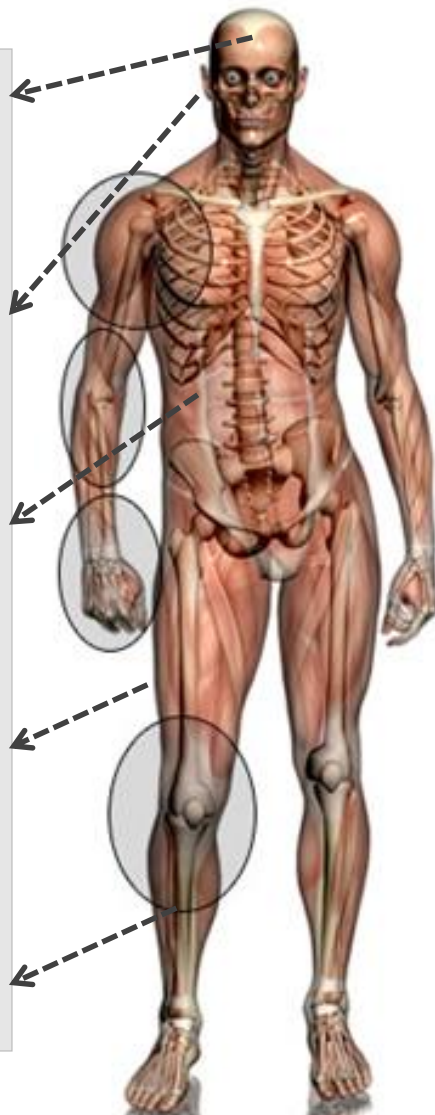
Sanyal et al. 2011
Swaminathan et al. 2008
Maximova et al. 2016

Skin

Thakral & Abraham 2009
Birka et al. 2015 (...)

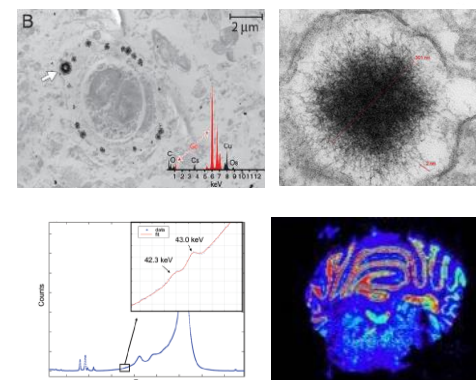
Bones

White et al. 2006
Darrah et al. 2009
Lord et al. 2017/2018 (...)

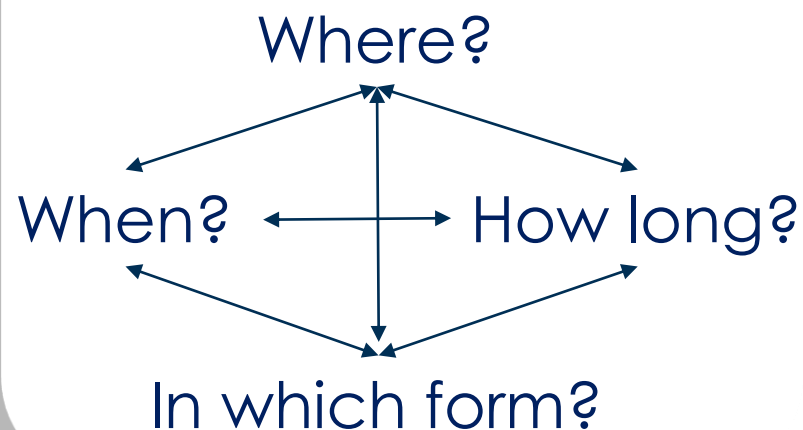


TECHNIQUES

ICP-MS
LA-ICP-MS
SEC-ICP-MS
HILIC-ICP-MS
SEM-EDX
TEM-EDX
X-Ray fluorescence (...)

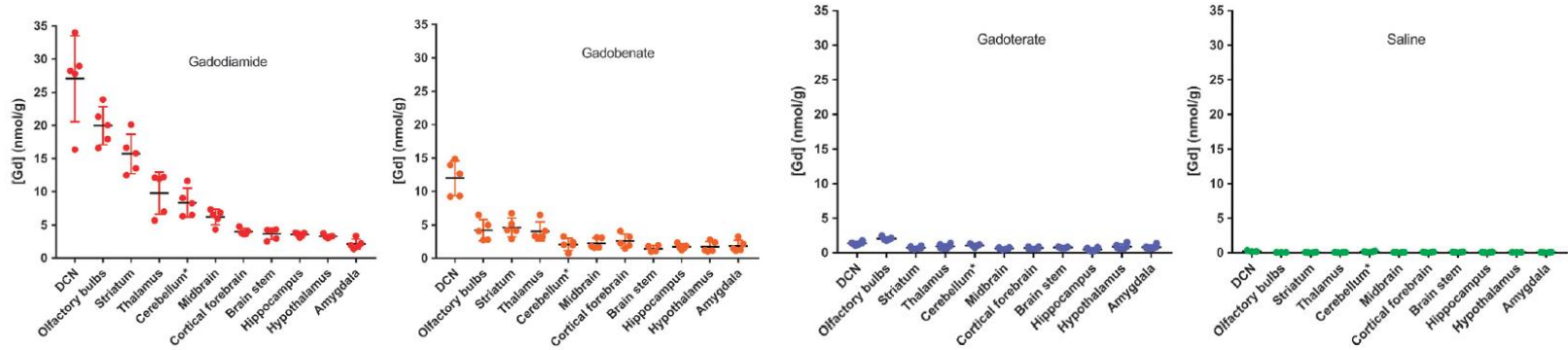


« Gadolinium »

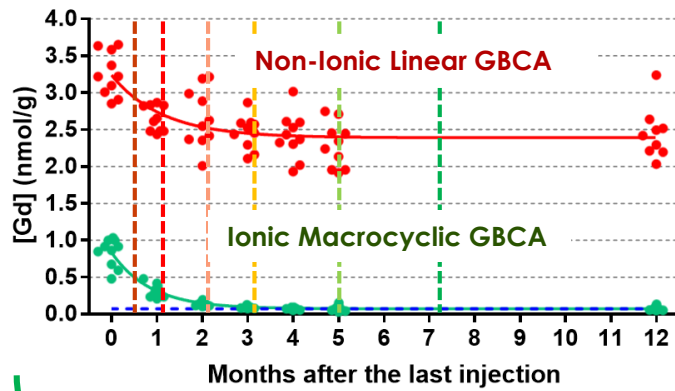


Localization, Kinetics and Forms with GBCAs comparison

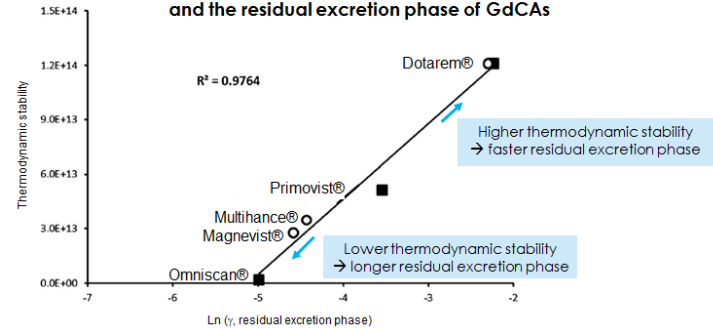
Localization



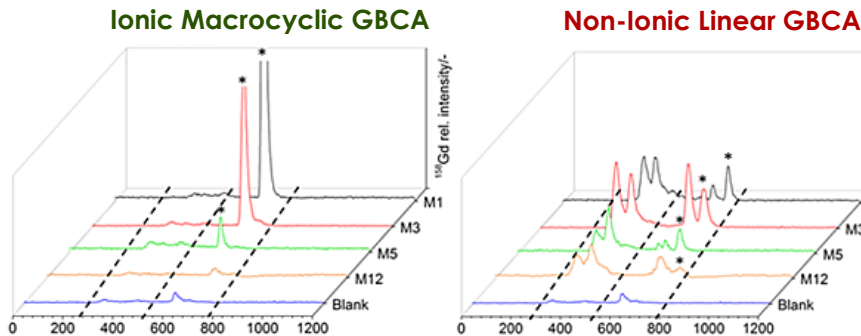
Kinetics



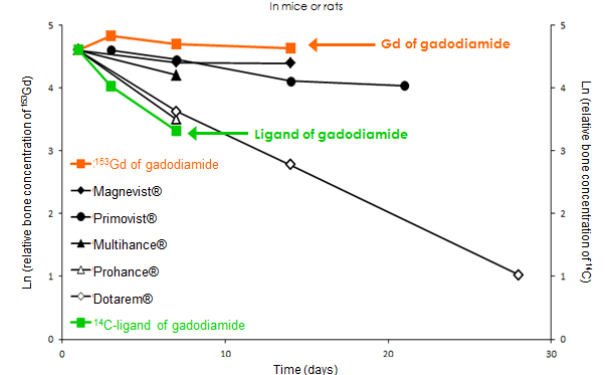
Correlation between the thermodynamic stability and the residual excretion phase of GdCAs



Forms



Time-dependent gadolinium concentrations in murine bone



Rasschaert et al. 2018

Lancelot 2016

Robert et al. 2018

Recommendation for Clinical / Non-Clinical Studies

“A good beginning makes a good ending”
(A good protocol makes a good interpretation)

- Do not only focus on Gd concentration and/or visibility
- Include Localization, Form and Kinetics
- Compare GBCAs with each others

Warning on wording:

- ❖ Gd deposition, Gd presence, Gd retention, Gd accumulation?
- ❖ Dissociated Gadolinium or complex of GBCA?

« Gadolinium »

