Supporting Information: Part 2 (*in vivo* imaging)

Liposomes of α,ε-N,N'-di-stearoyl lysine-derived amide lipid and phospholipid: Incorporation of lipid A-ligand for bacterial targeting and sialic acid as PEGylation alternative for phagocytosis resistance

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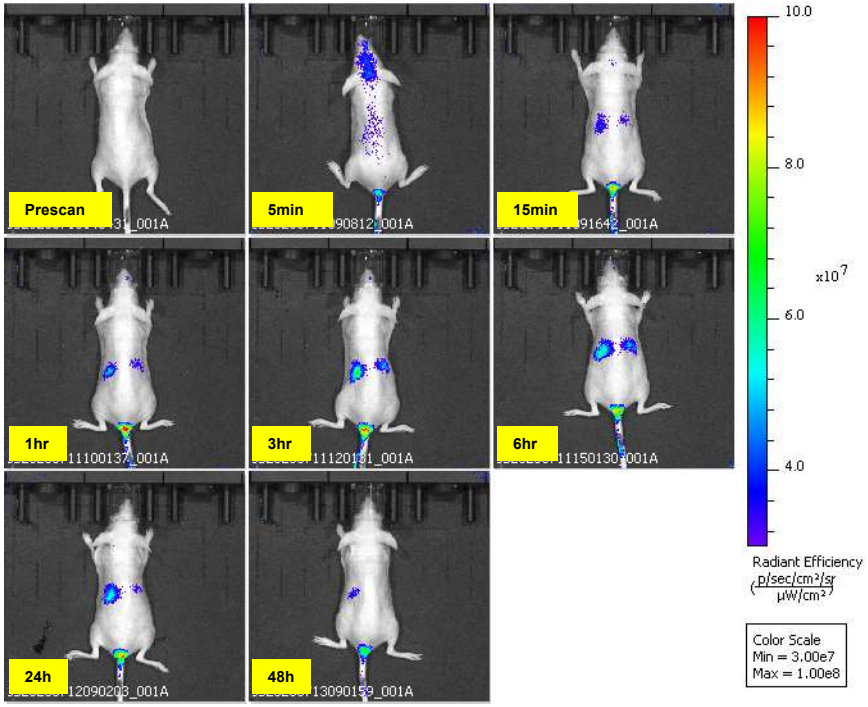
First *in vivo* imaging experiment

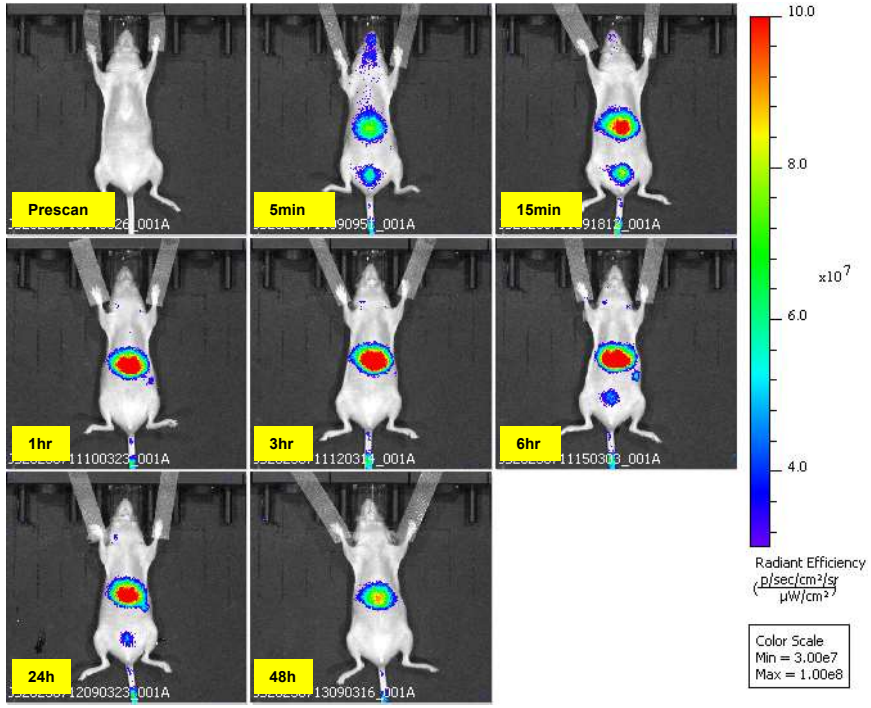
- **Phospholipids**
- **Phospholipids/2S-P1000 (1:1)**
- **Phospholipids/2S-Ps-Sia (1:1)**

In vivo Imaging IV (tail vein) inj. of Group 1: Phospholipids M1

Dorsal



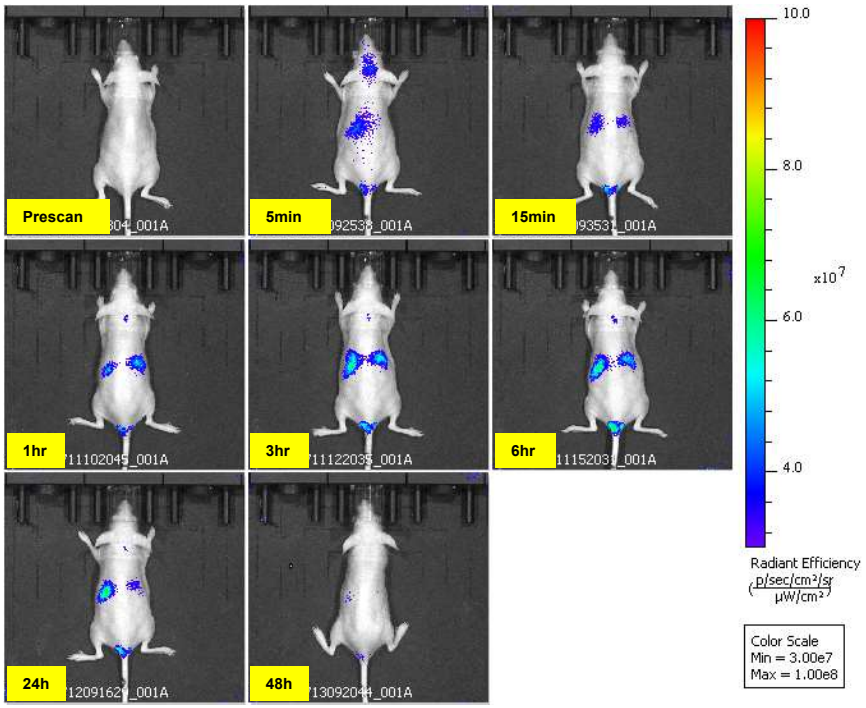
Ventral



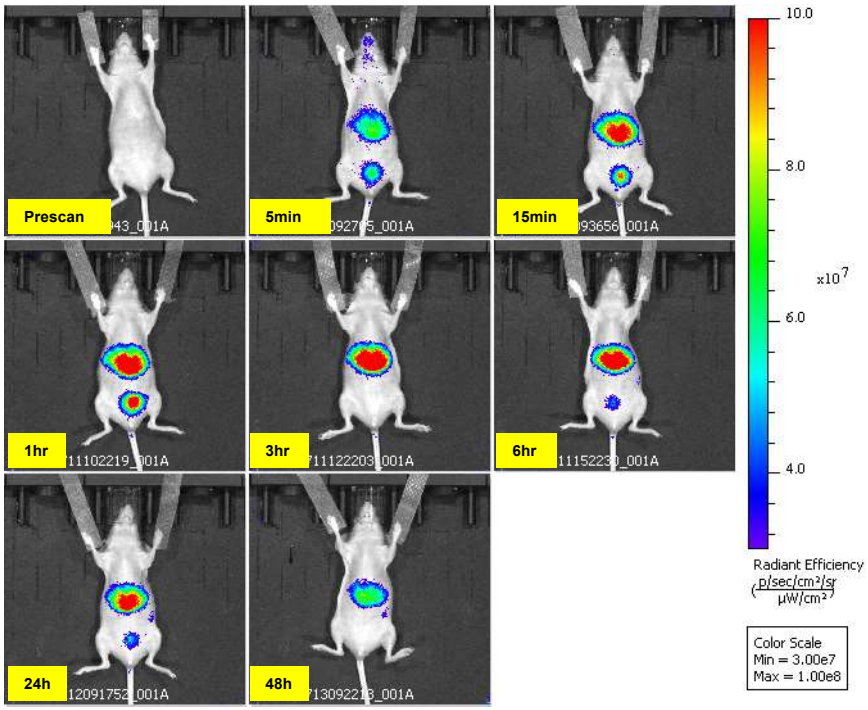
- High level of signals observed in the liver starting at 5 minutes and persisted at least for 48 hours
- Detectable signal in the bladder starting at 5 minutes.
- Detectable signals observed in the kidney at 15 minutes and peaked at 6 hours.

In vivo Imaging IV (tail vein) inj. of Group 1: Phospholipids M2

Dorsal

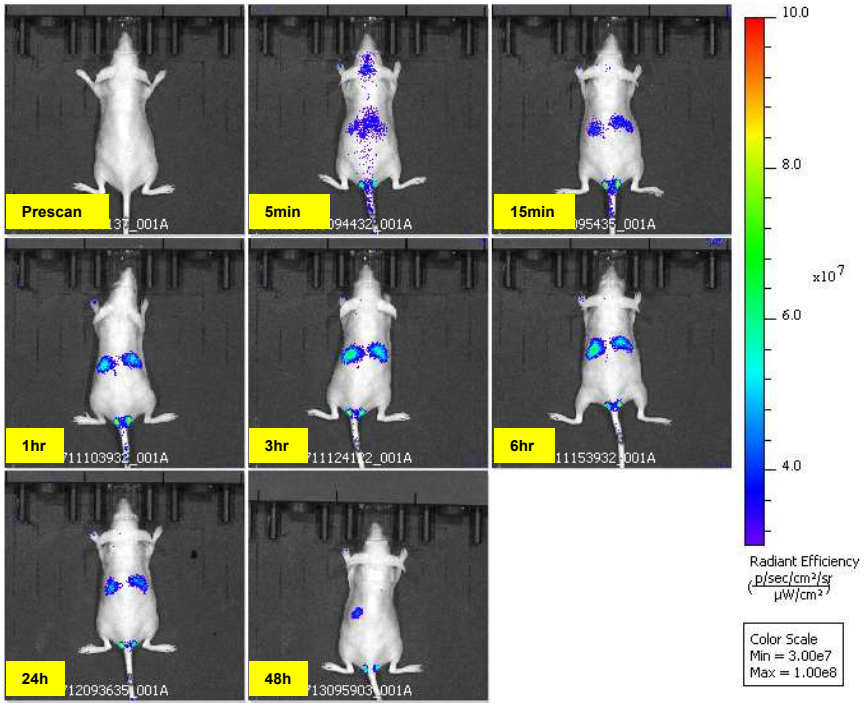


Ventral

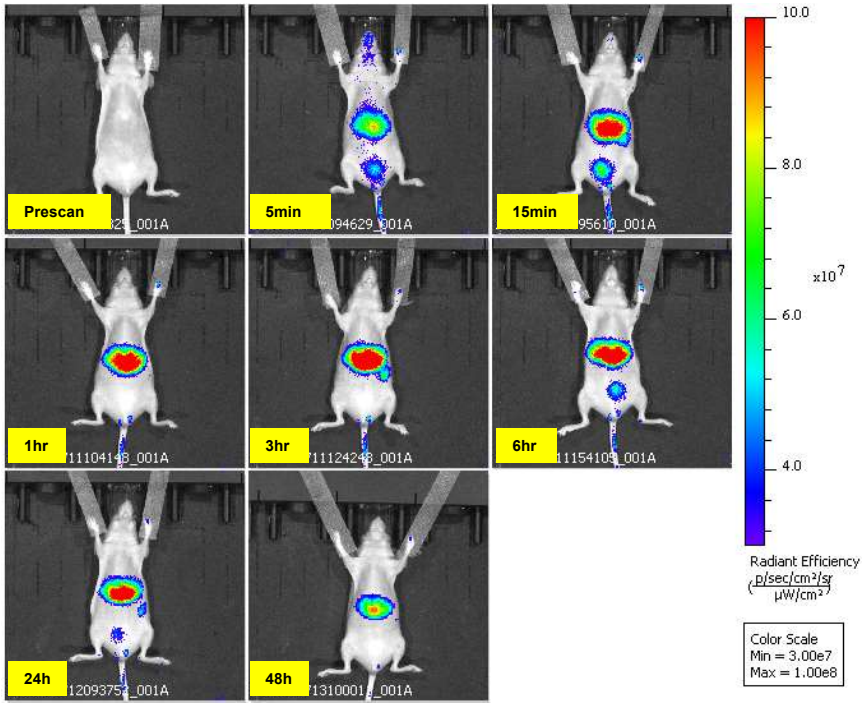


In vivo Imaging IV (tail vein) inj. of Group 1: Phospholipids M3

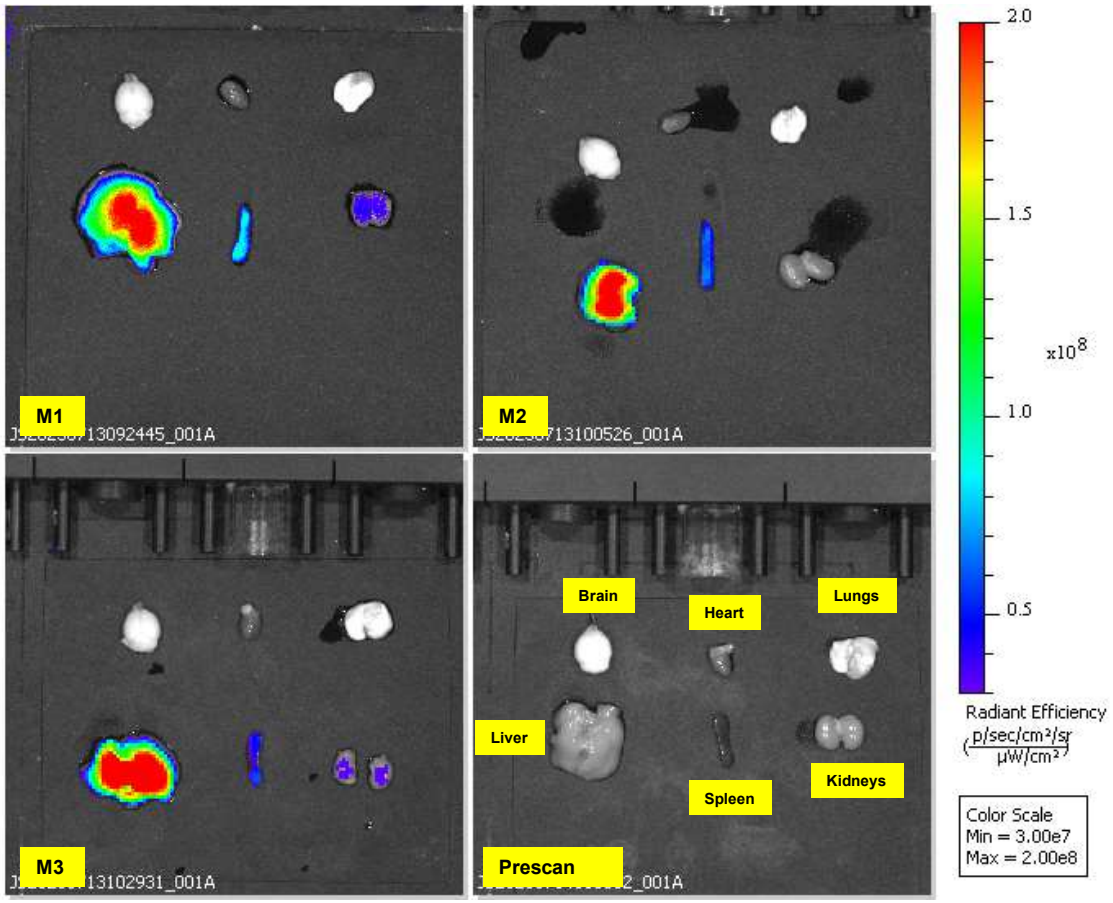
Dorsal



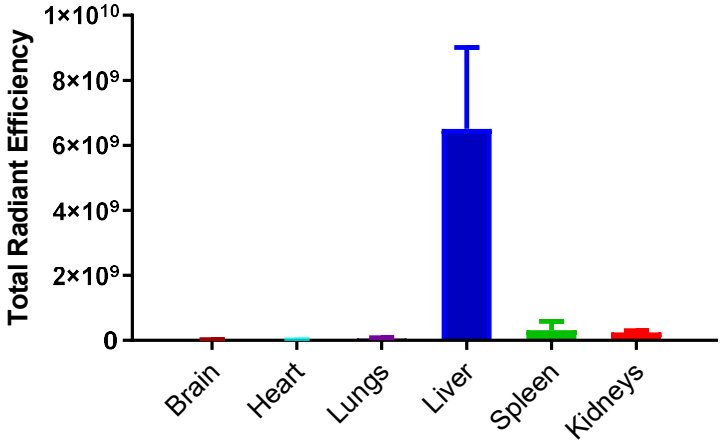
Ventral



Ex vivo Imaging IV (tail vein) inj. of Group 1: Phospholipids



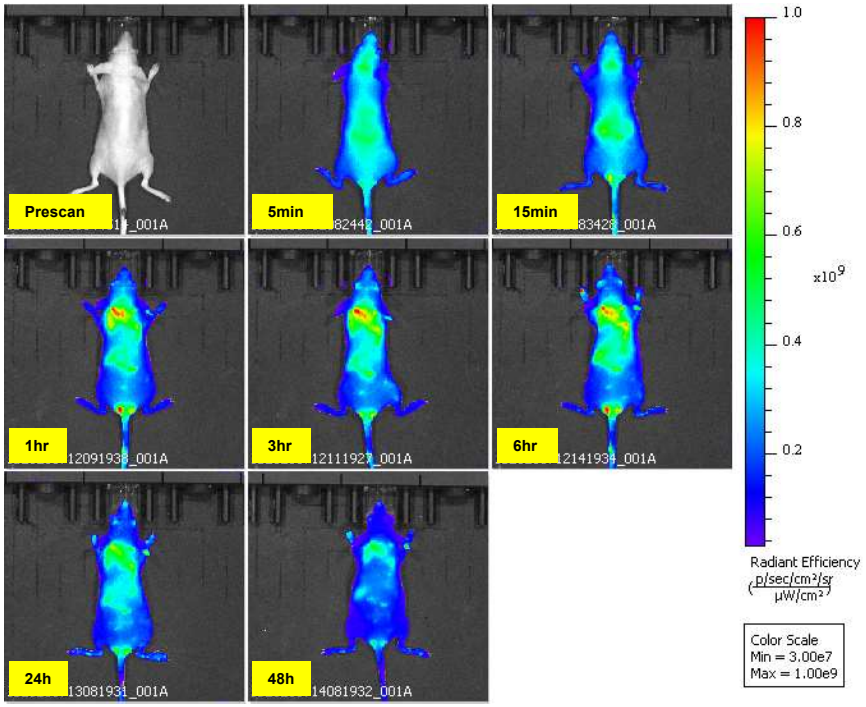
Quantification of *ex vivo* Imaging IV (tail vein) inj. of Group 1 Phospholipids alone: Total radiant efficiency (avg of 3 mice, mean +/- SD)



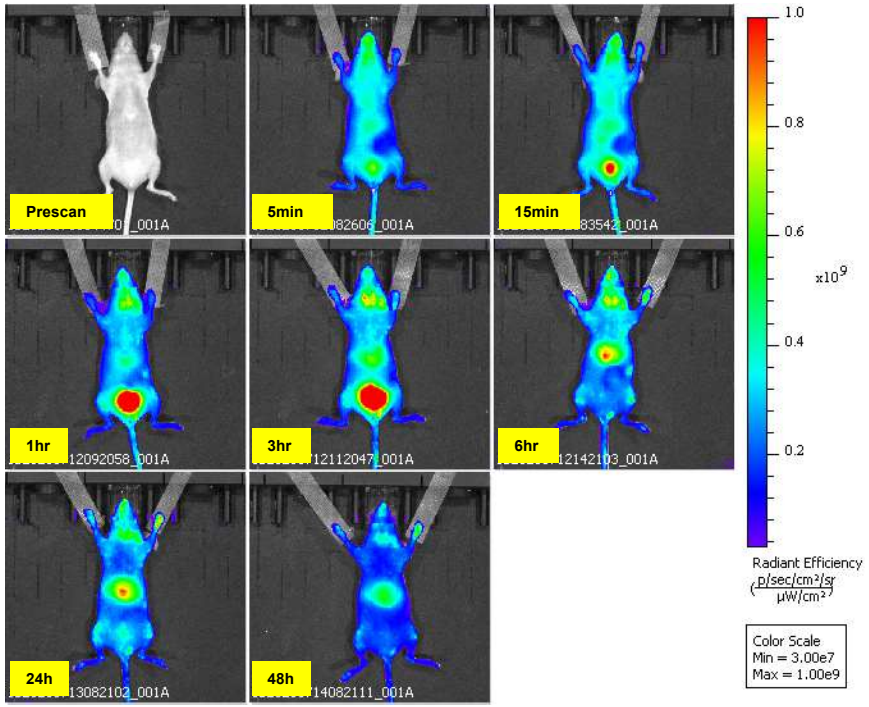
- Highest signals observed in the liver.
- Lower signals observed in spleen and kidneys.

In vivo Imaging IV (tail vein) inj. of Group 2: Phospholipids /2S-P1000 1:1 M4

Dorsal



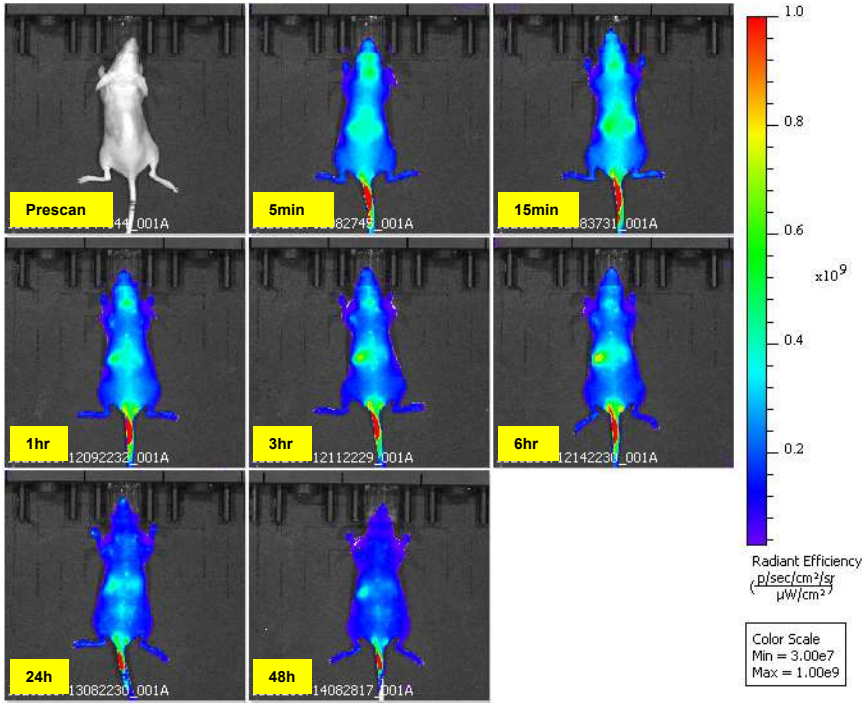
Ventral



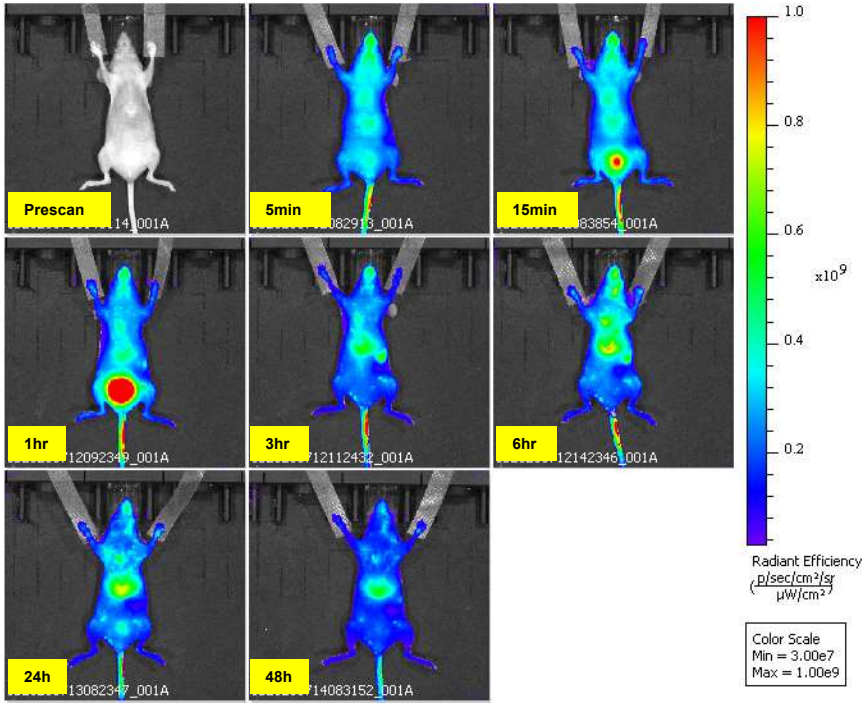
- Drug distributed to whole body within 5 minutes
- High level of signals were observed in the bladder starting at 15 minutes
- Higher signals observed in the liver at 6 and 24 hours then declined at 48 hours
- Body signals persisted at least for 48 hours

In vivo Imaging IV (tail vein) inj. of Group 2: Phospholipids /2S-P1000 1:1 M5

Dorsal

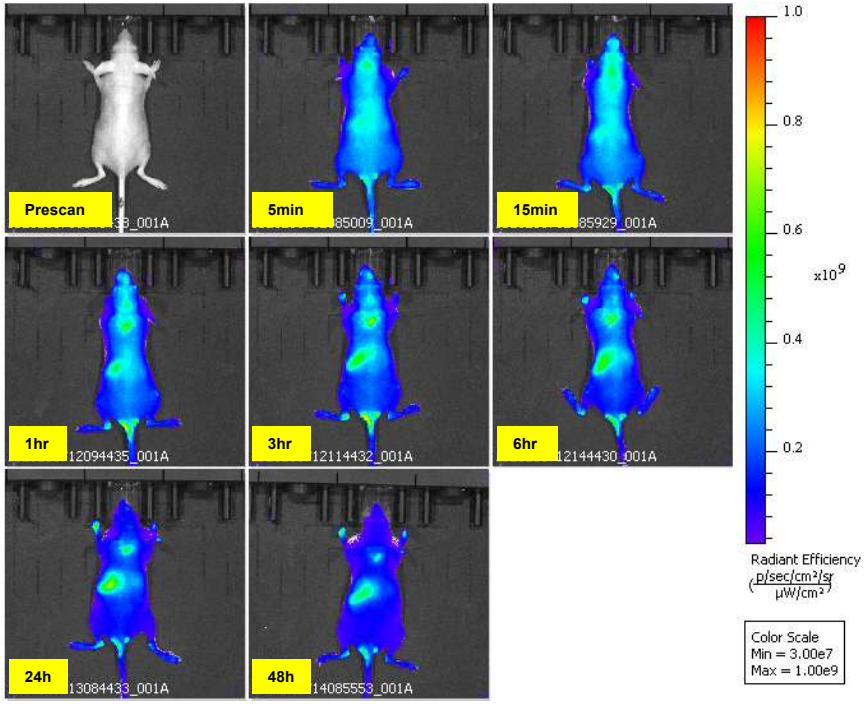


Ventral

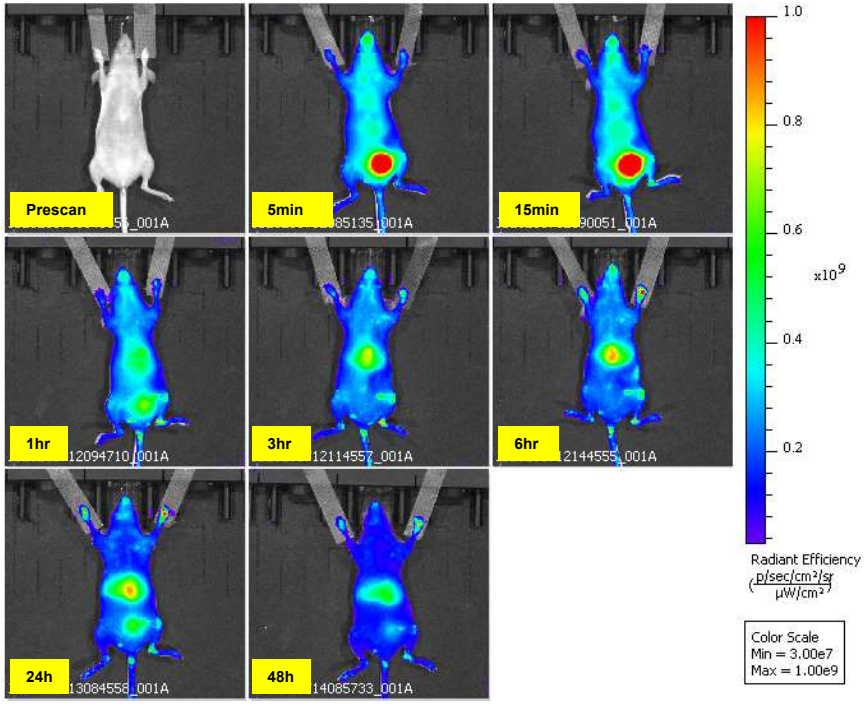


In vivo Imaging IV (tail vein) inj. of Group 2: Phospholipids /2S-P1000 1:1 M6

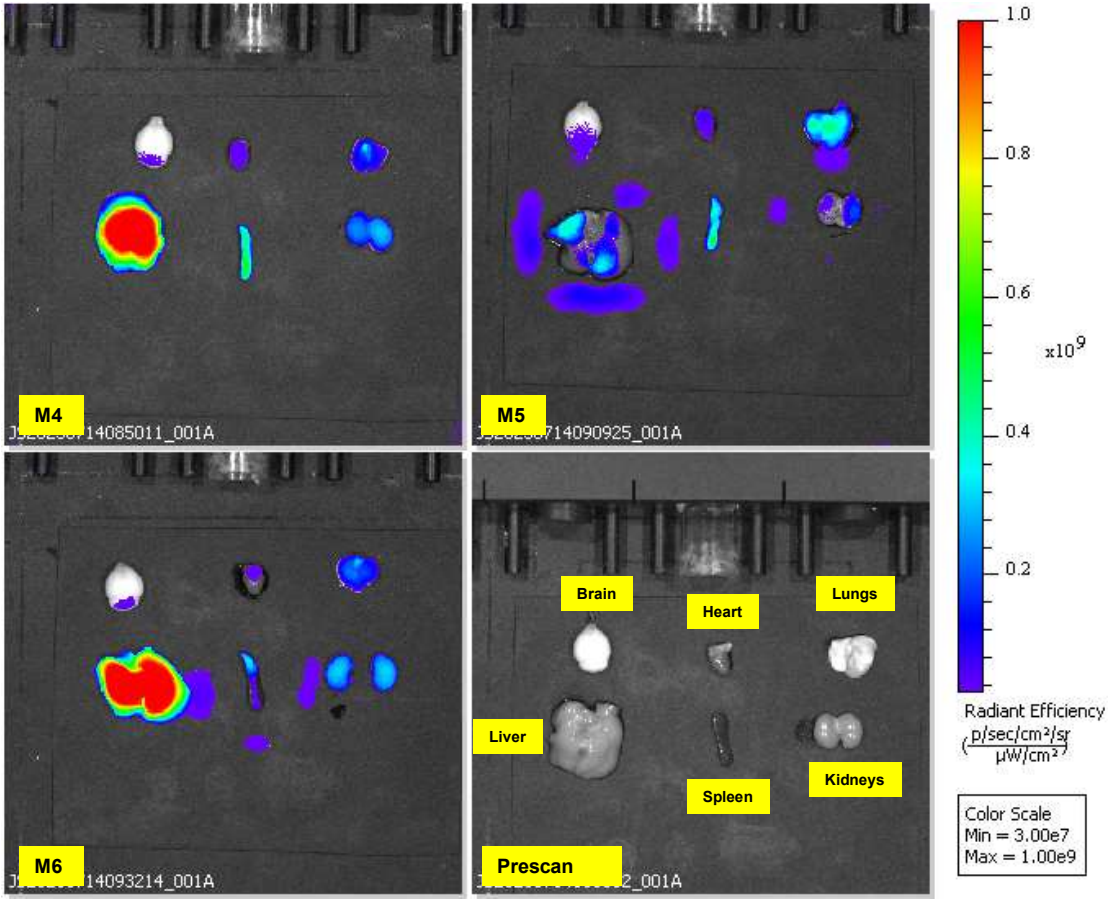
Dorsal



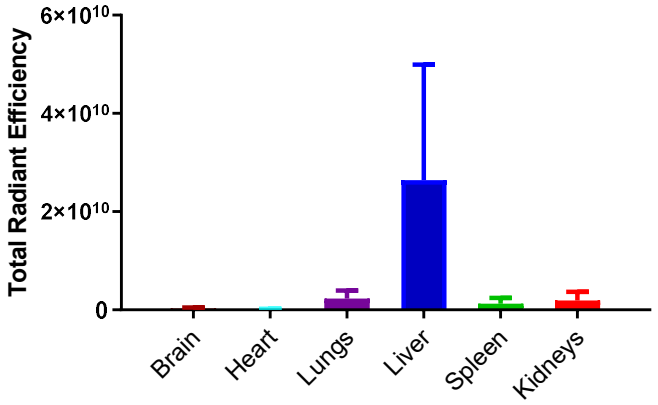
Ventral



Ex Vivo Imaging IV (tail vein) inj. of Group 2: Phospholipids /2S-P1000 1:1



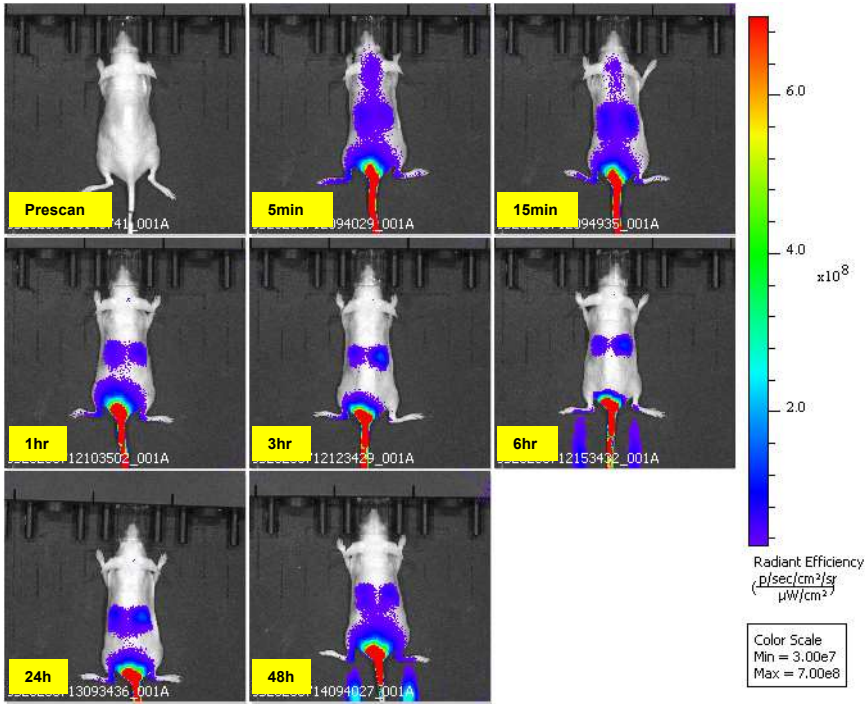
Quantification of *ex vivo* Imaging IV (tail vein) inj. of Group 2 Phospholipids/2S-P1000 1:1: Total radiant efficiency (avg of 3 mice, mean +/- SD)



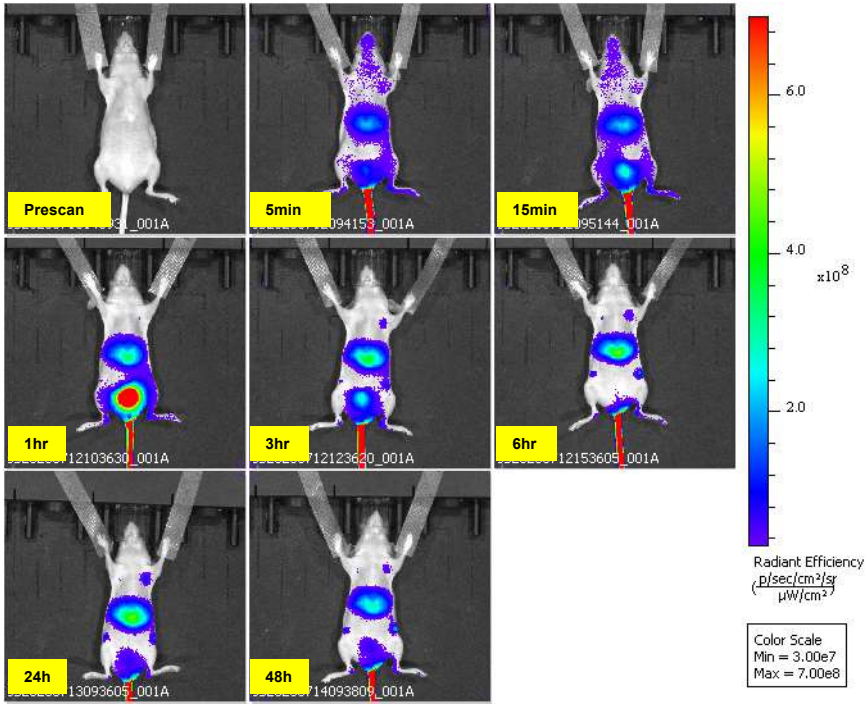
- Highest signals observed in the liver.
- Lower signals observed in spleen, kidneys and lung.

In vivo Imaging IV (tail vein) inj. of Group 3: Phospholipids /2S-Sia 1:1 M7

Dorsal



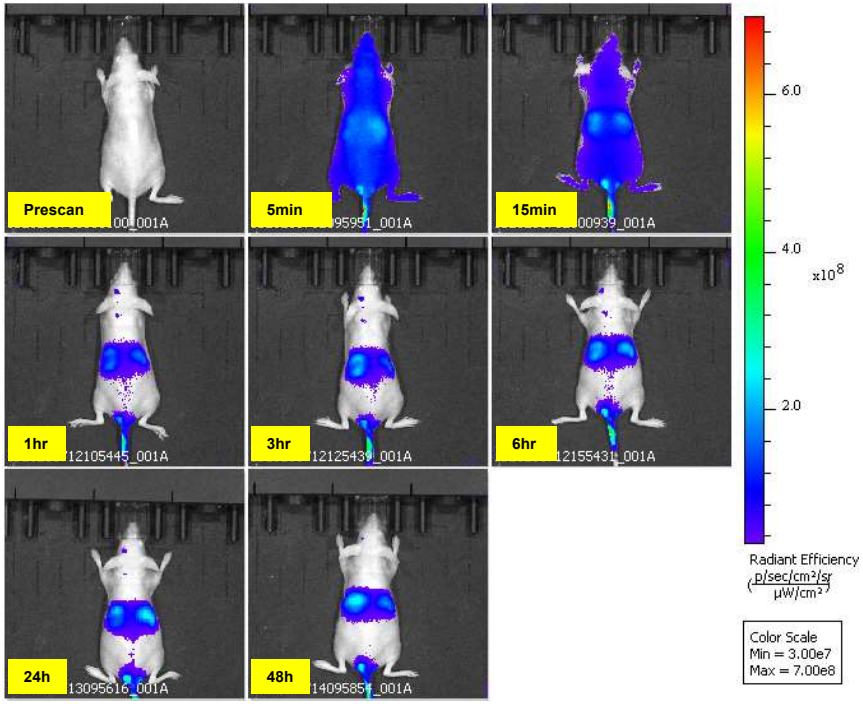
Ventral



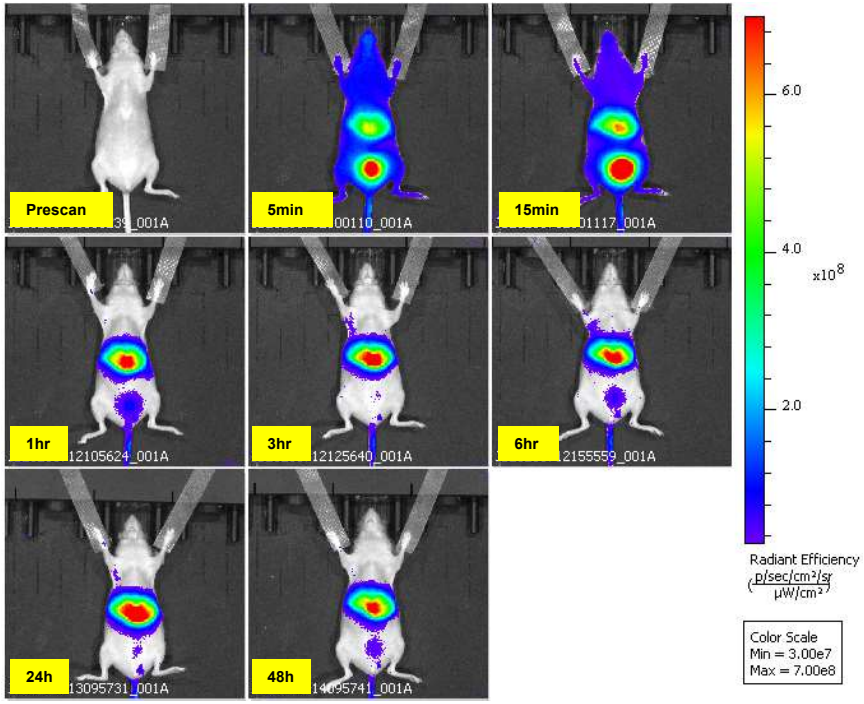
- NOTE: Large signals in tail vein suggesting failed IV injection.

In vivo Imaging IV (tail vein) inj. of Group 3: Phospholipids /2S-Sia 1:1 M8

Dorsal



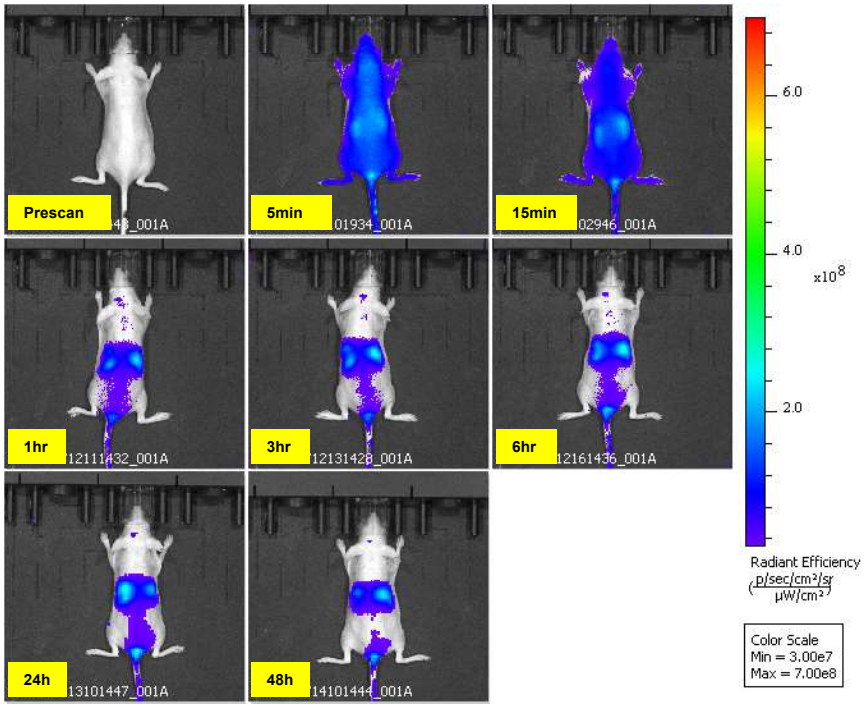
Ventral



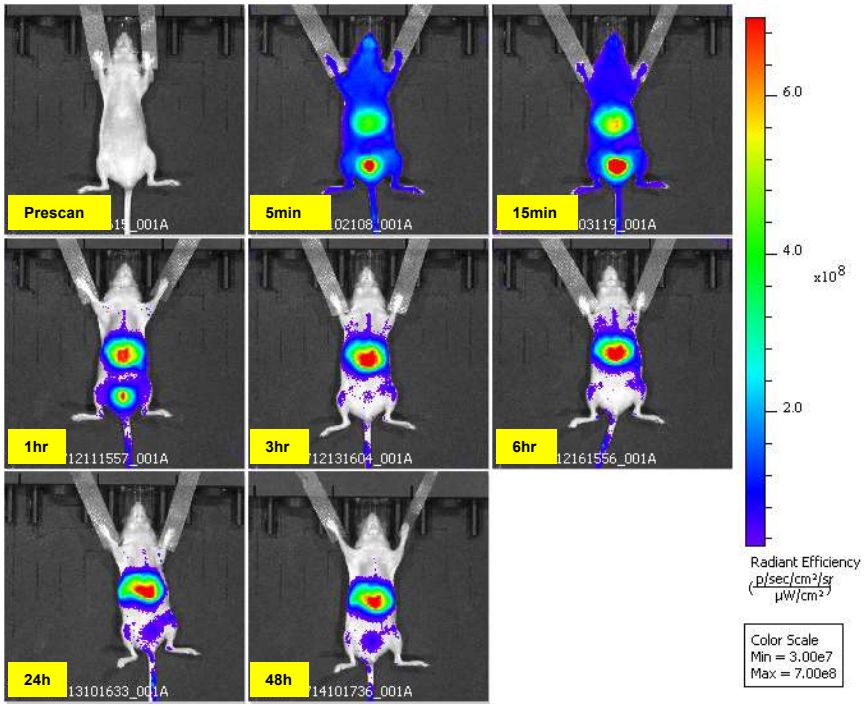
- Higher level of signals were observed in the kidney and liver starting at 5 minutes.
- High signal in liver persisted for up to 48hrs
- Signals were observed in bladder starting at 5 minutes

In vivo Imaging IV (tail vein) inj. of Group 3: Phospholipids /2S-Sia 1:1 M9

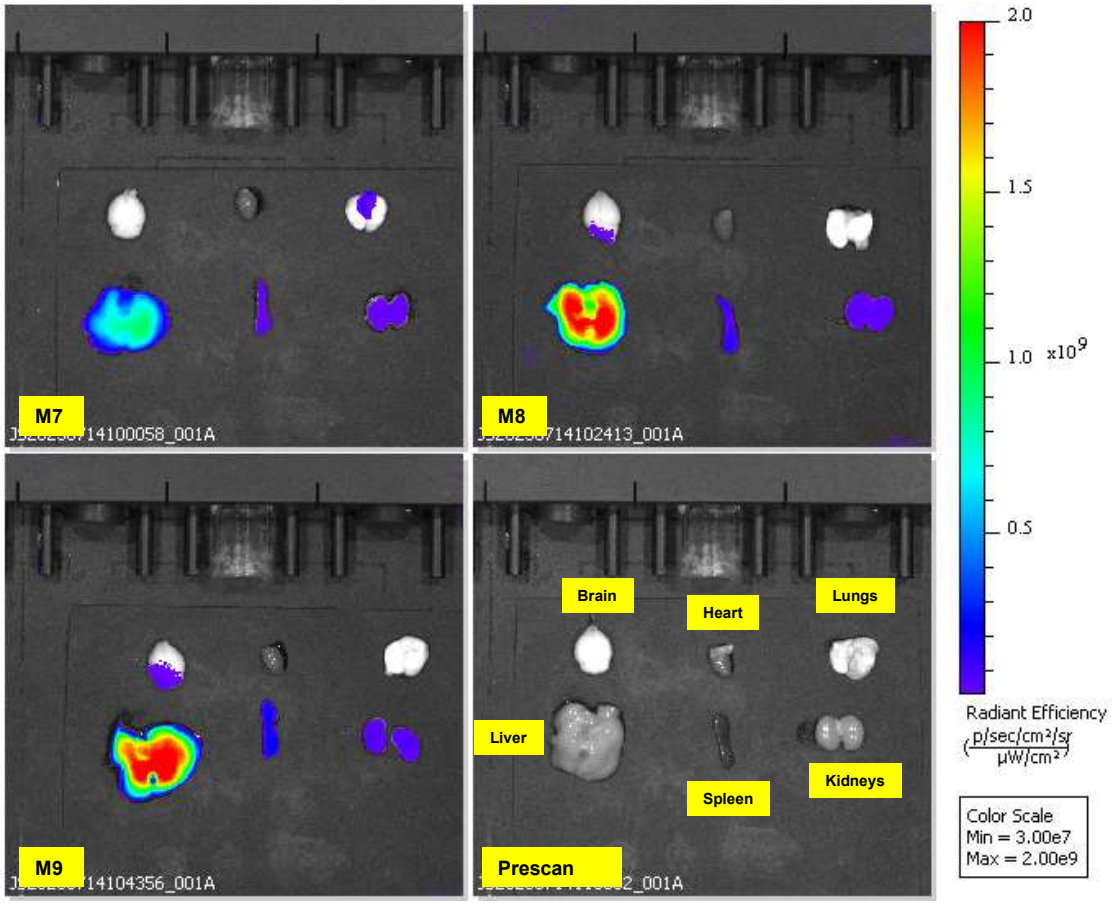
Dorsal



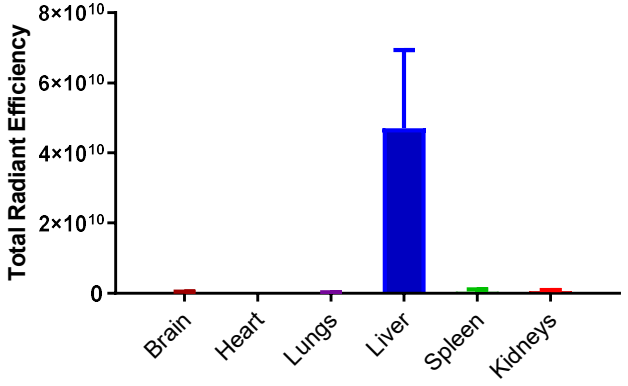
Ventral



Ex Vivo Imaging IV (tail vein) inj. of Phospholipids /2S-Sia 1:1



Quantification of *ex vivo* Imaging IV (tail vein) inj. of Group 2 Phospholipids/2S-Sia 1:1: Total radiant efficiency (avg of 3 mice, mean +/- SD)



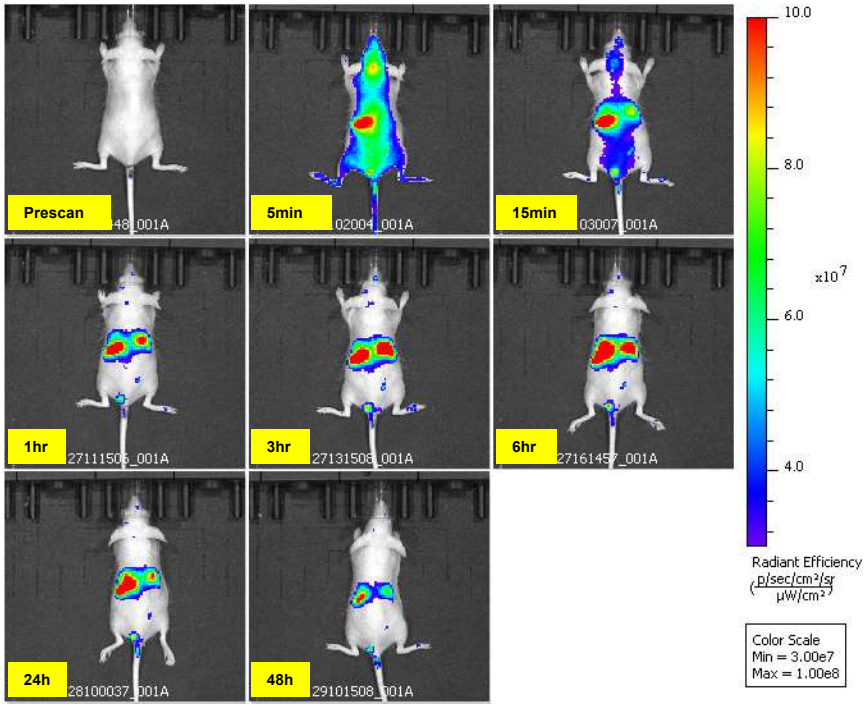
- Highest signals observed in the liver.

Second *in vivo* imaging experiment

- Phospholipids
- Phospholipids/2S-P1000 (3:1)
- Phospholipids/2S-Ps-Sia (3:1)

In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids M1

Dorsal



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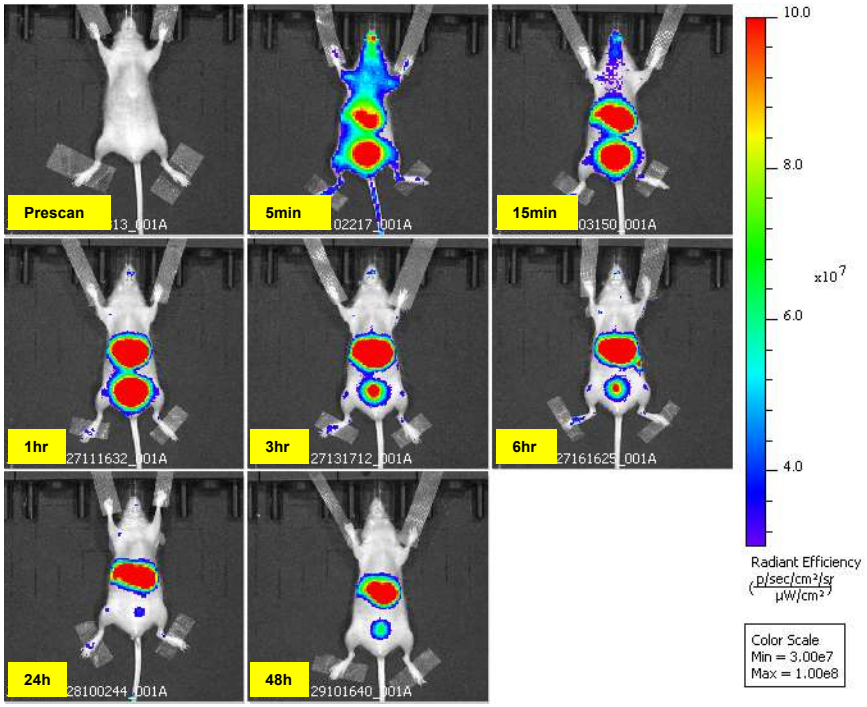
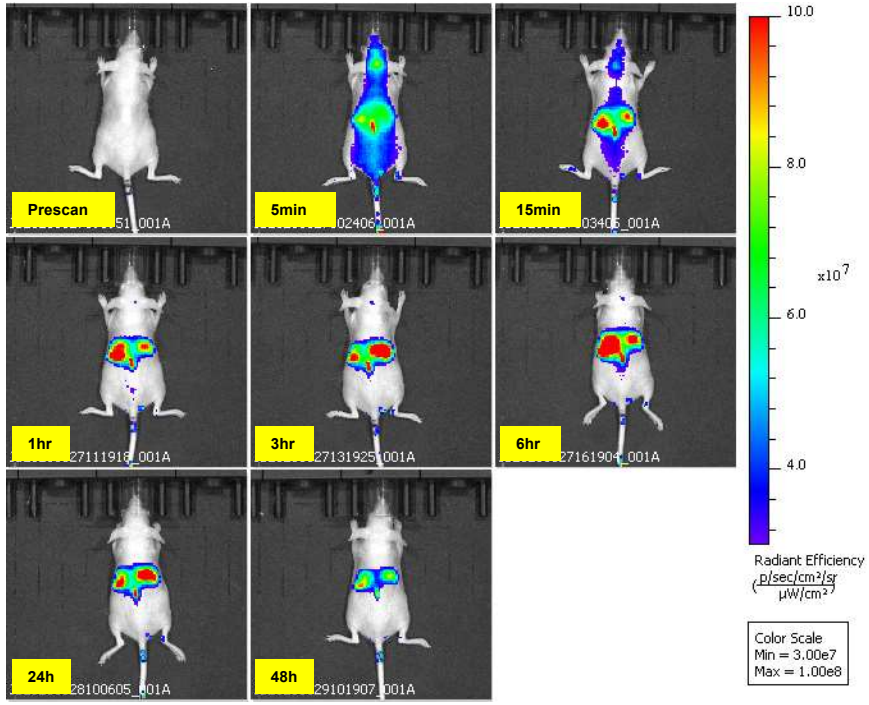


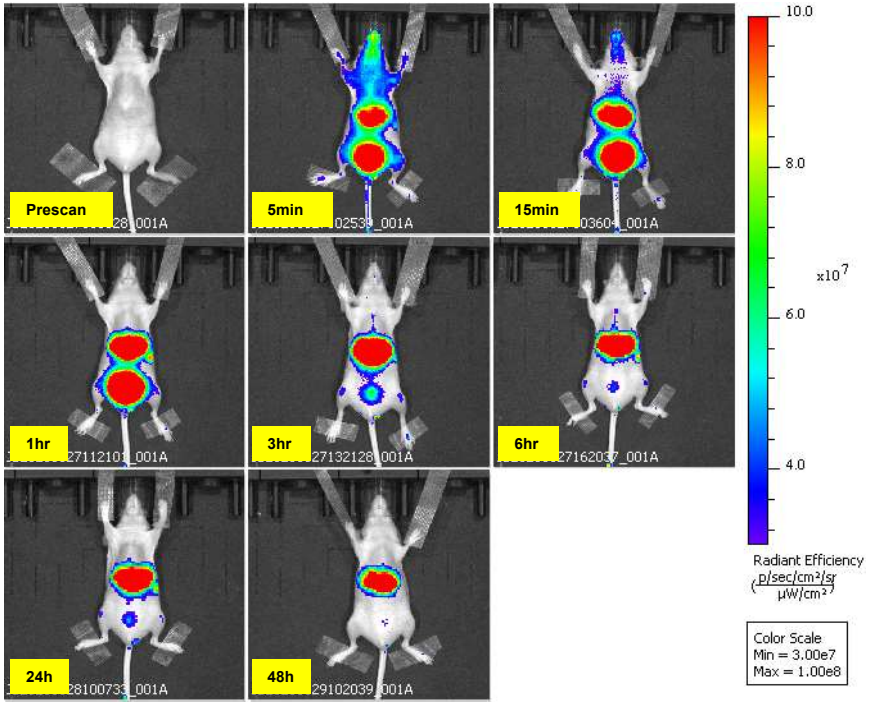
- High level of signals observed in the liver and kidney starting at 5 minutes and persisted at least for 48 hours
- Higher signal in the bladder starting at 5 minutes.

In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids M2

Dorsal

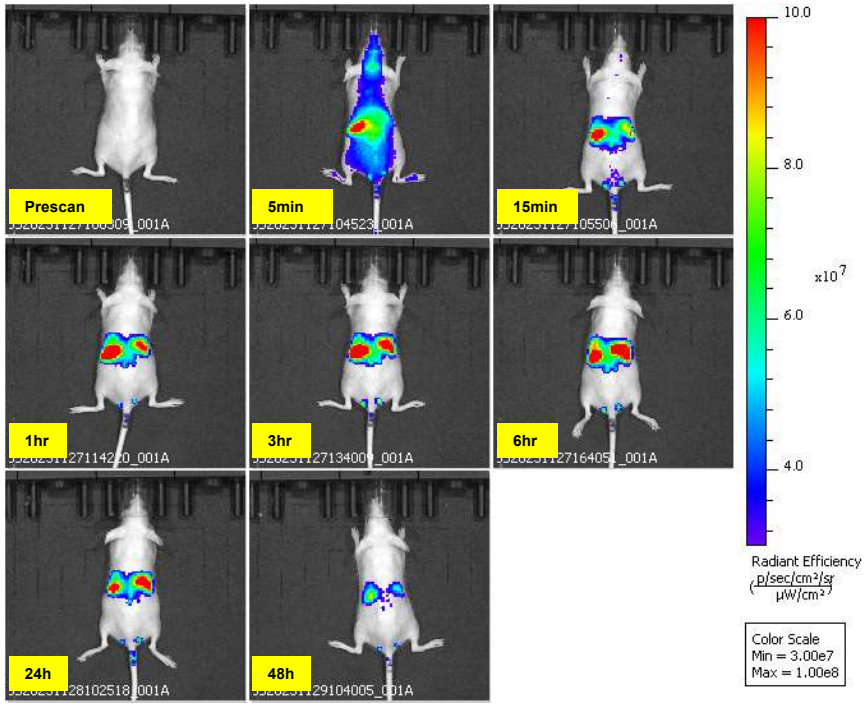


Ventral

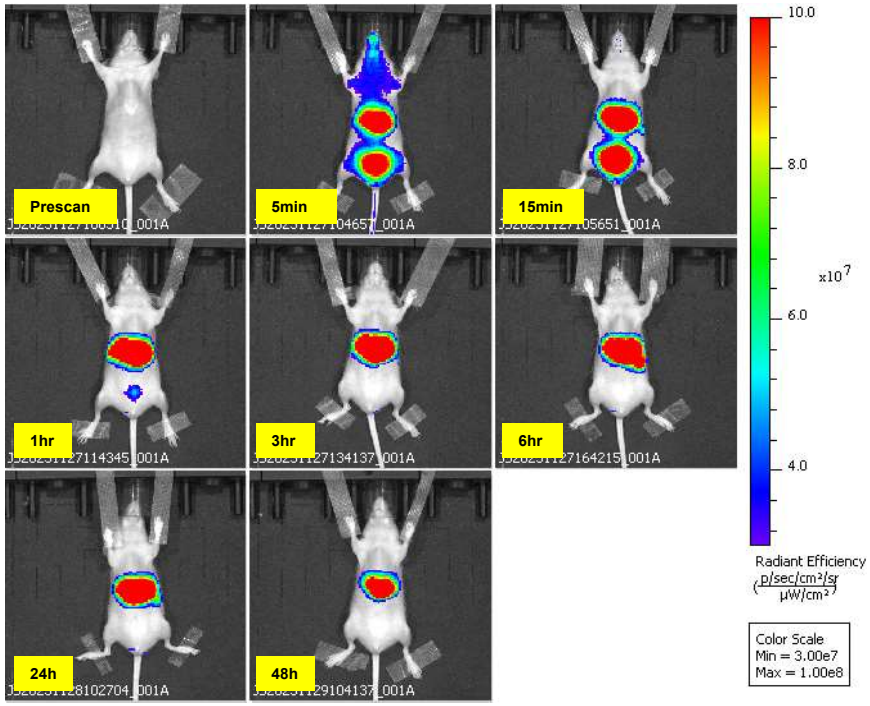


In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids M3

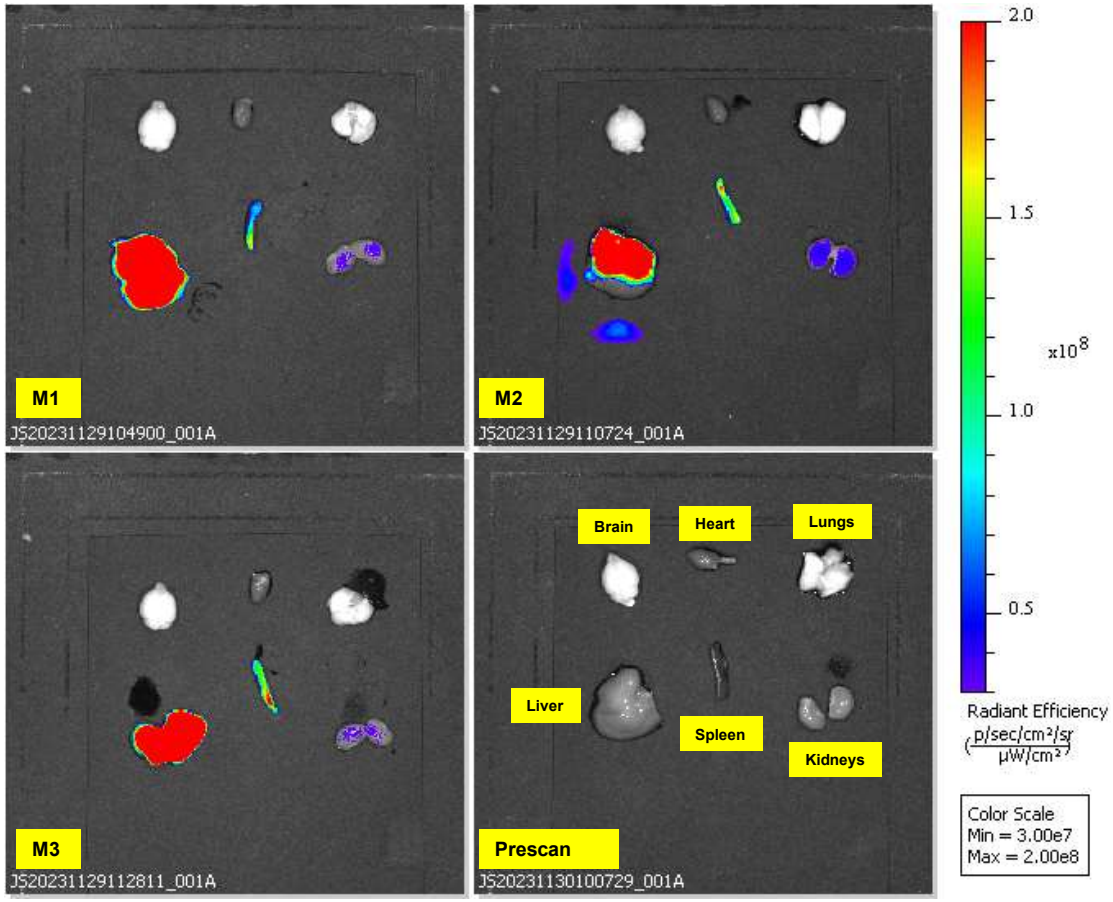
Dorsal

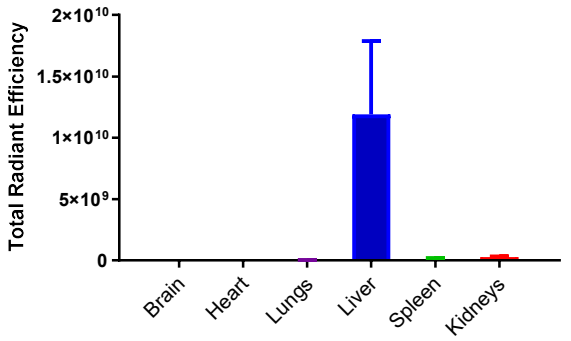


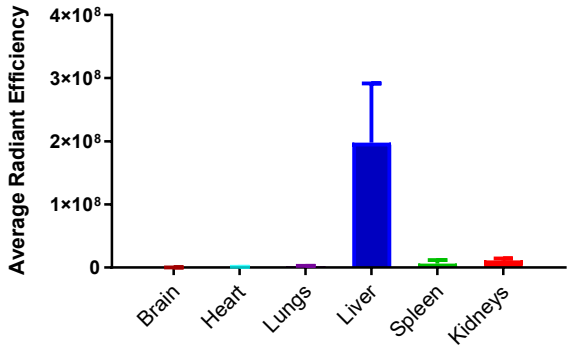
Ventral



Ex vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids



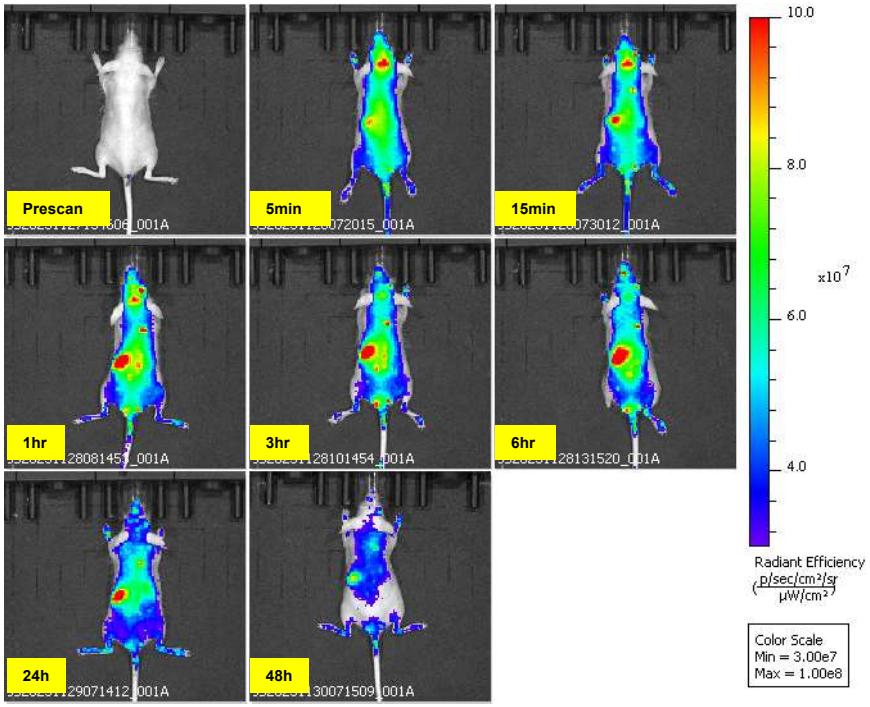




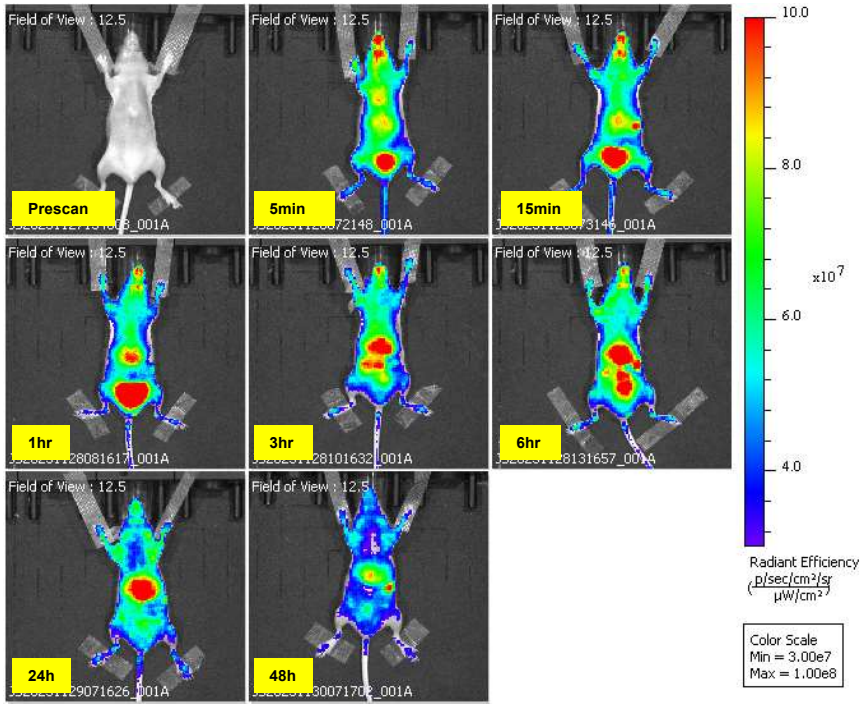
- n=3, mean ± SD
- Highest signals observed in the liver.
- Lower signals observed in spleen and kidneys.

In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids/2S-P1000 3:1 M1

Dorsal



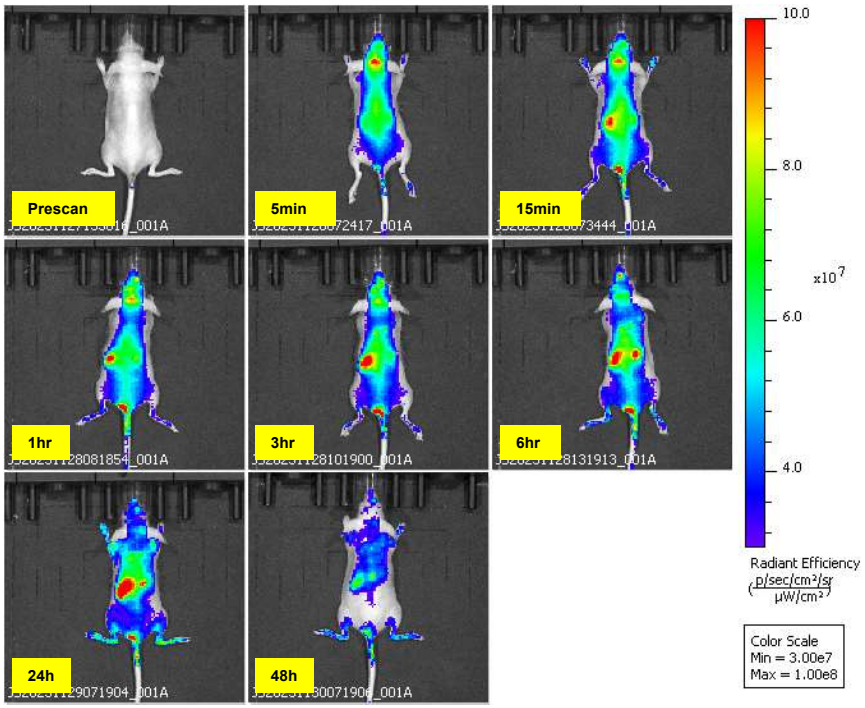
Ventral



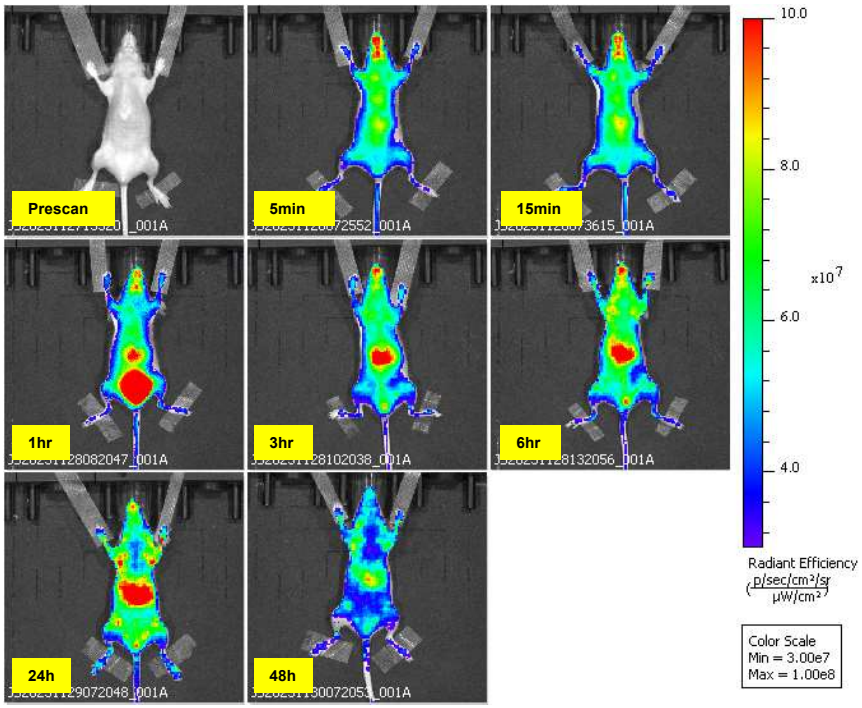
- Drug distributed to whole body within 5 minutes
- High level of signals were observed in the mouth and neck area starting at 5 minutes then decline with time
- High signals were observed in the kidney and persisted until 48 hours.
- Higher signals observed in the liver at 6 and 24 hours then declined at 48 hours
- Body signals persisted at least for 48 hours

In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids/2S-P1000 3:1 M2

Dorsal

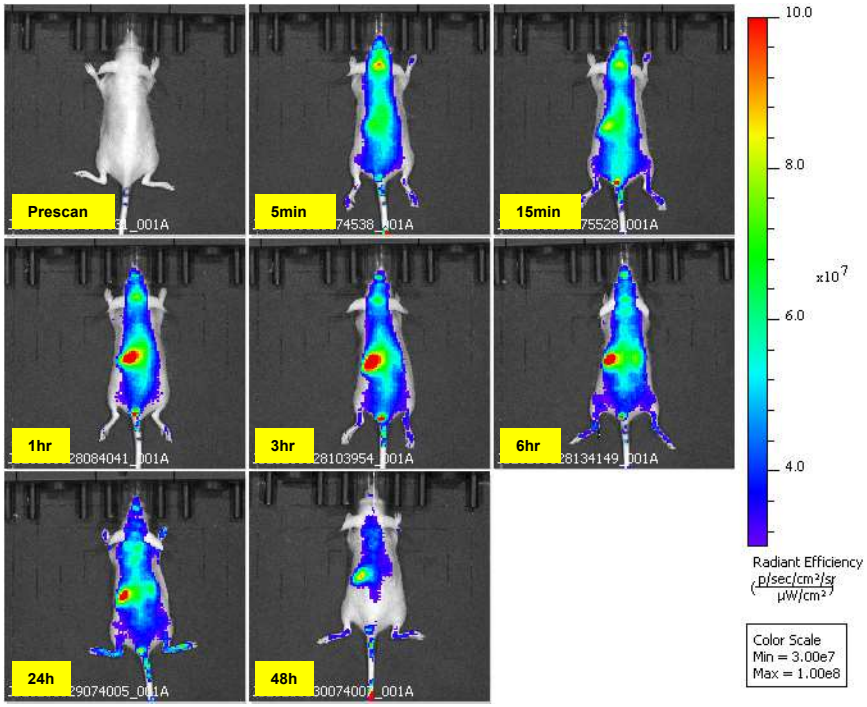


Ventral

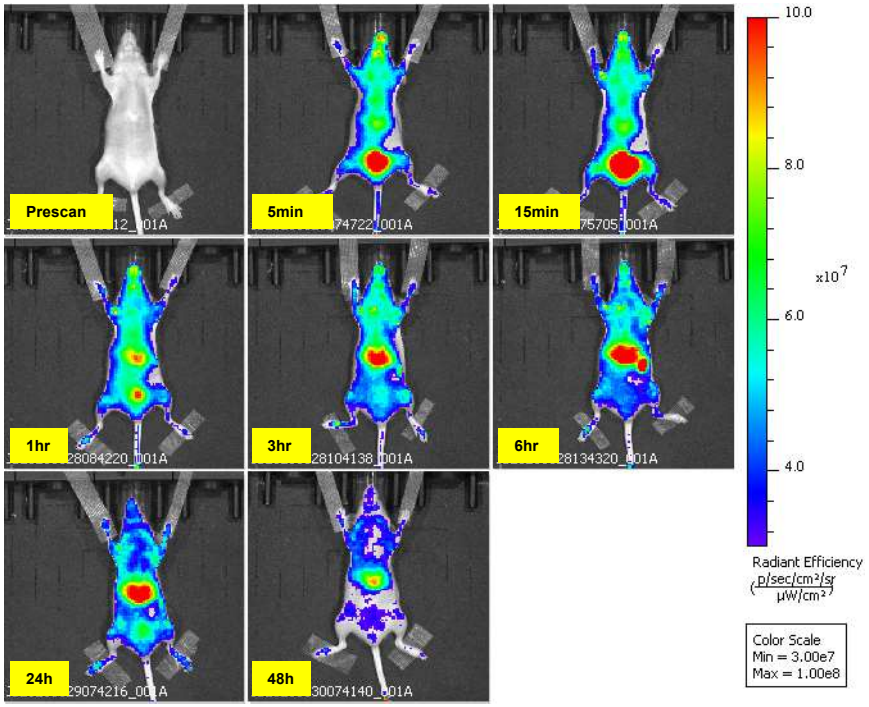


In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids/2S-P1000 3:1 M3

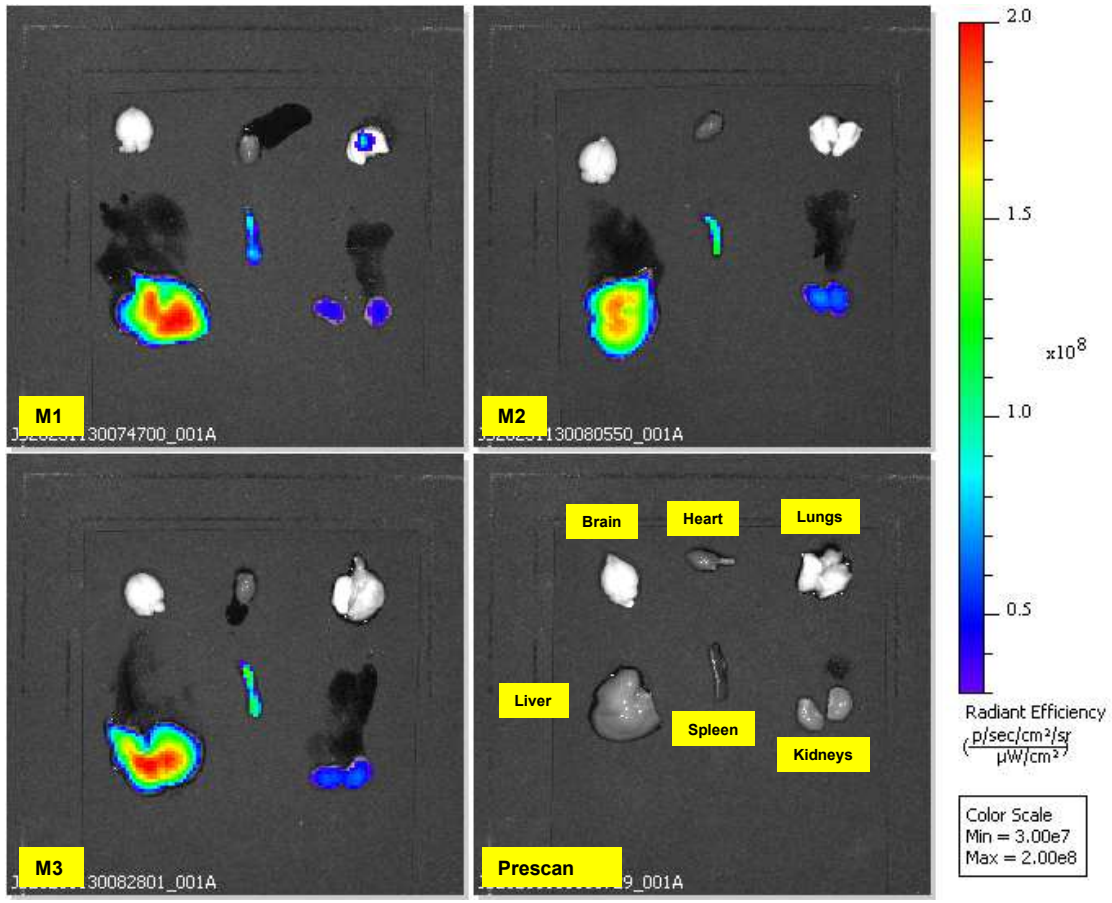
Dorsal



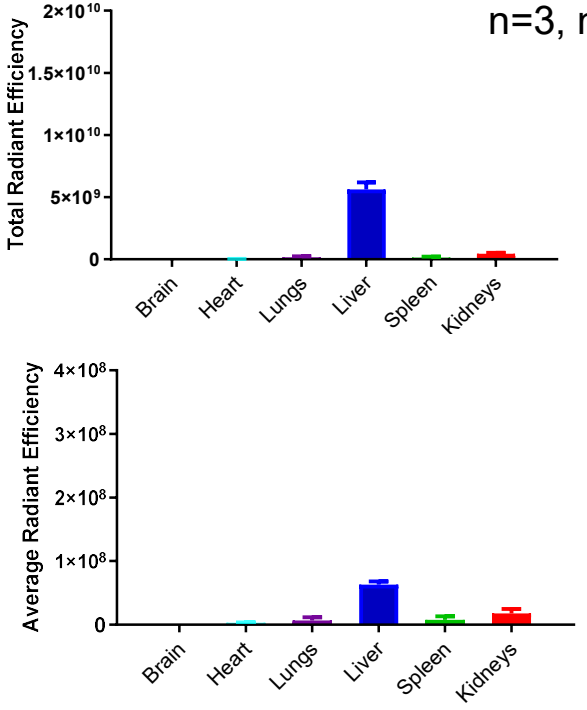
Ventral



Ex Vivo Imaging IV (tail vein) inj. of Phospholipids/2S-P1000 3:1 (Drug 3B)



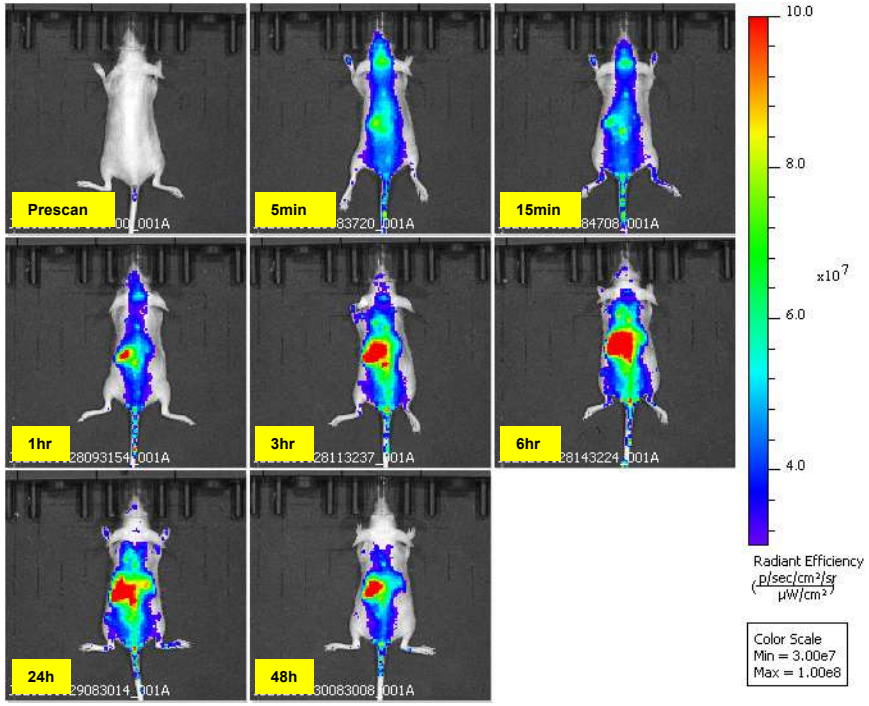
n=3, mean ± SD



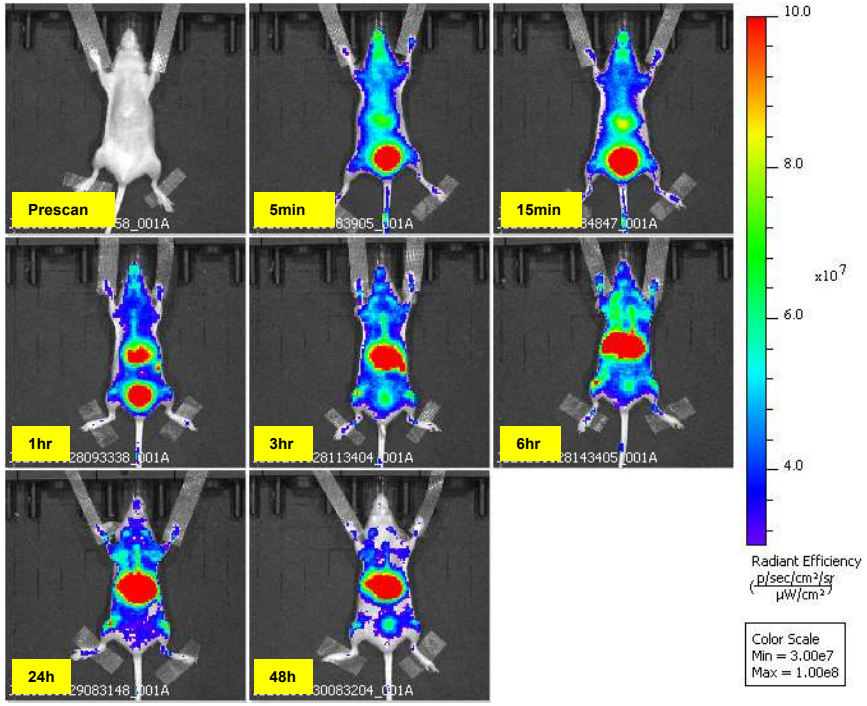
- Highest signals observed in the liver.
- Lower signals in lung, kidney and spleen.

In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids/2S-P3-Sia 3:1 M1

Dorsal



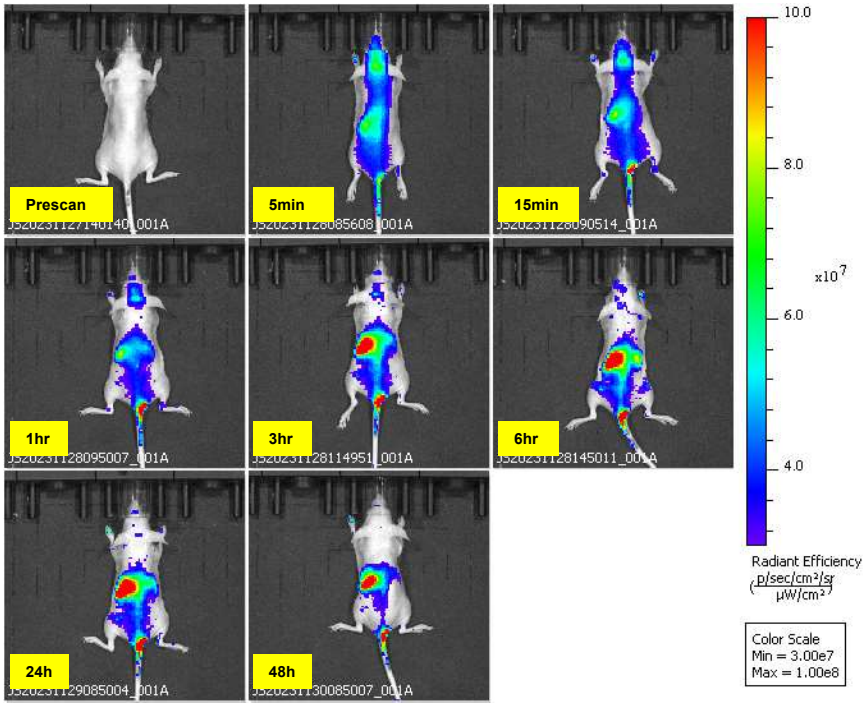
Ventral



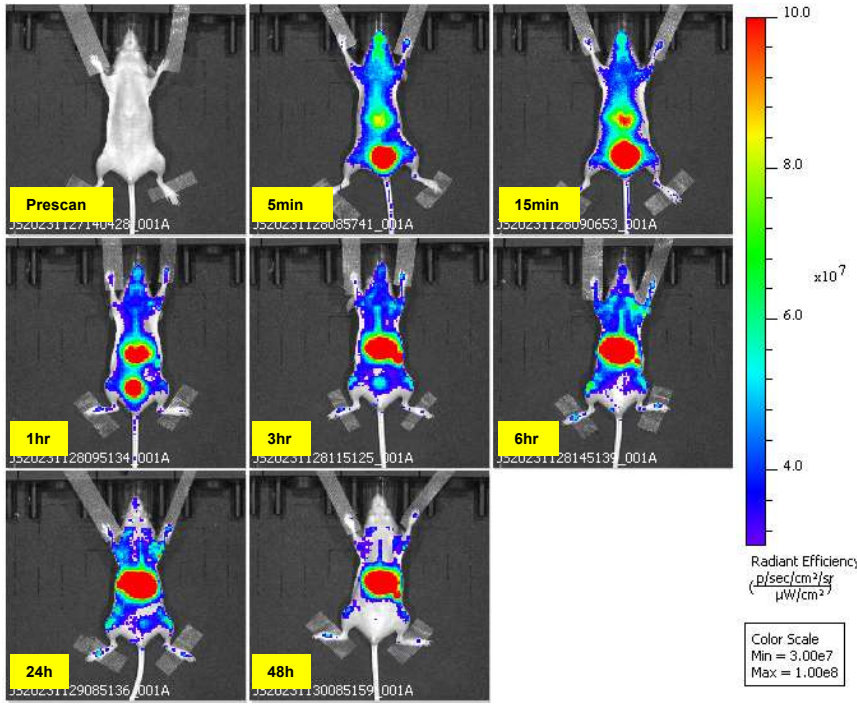
- Drug distributed to centre of the body within 5 minutes
- High level of signals were observed in the mouth and neck area starting at 5 minutes then decline with time
- High signals were observed in the kidney and persisted until 48 hours.
- Higher signals observed in the liver at 6 and 24 hours and persisted until 48 hours
- Body signals persisted at least for 48 hours

In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids/2S-P3-Sia 3:1 M2

Dorsal



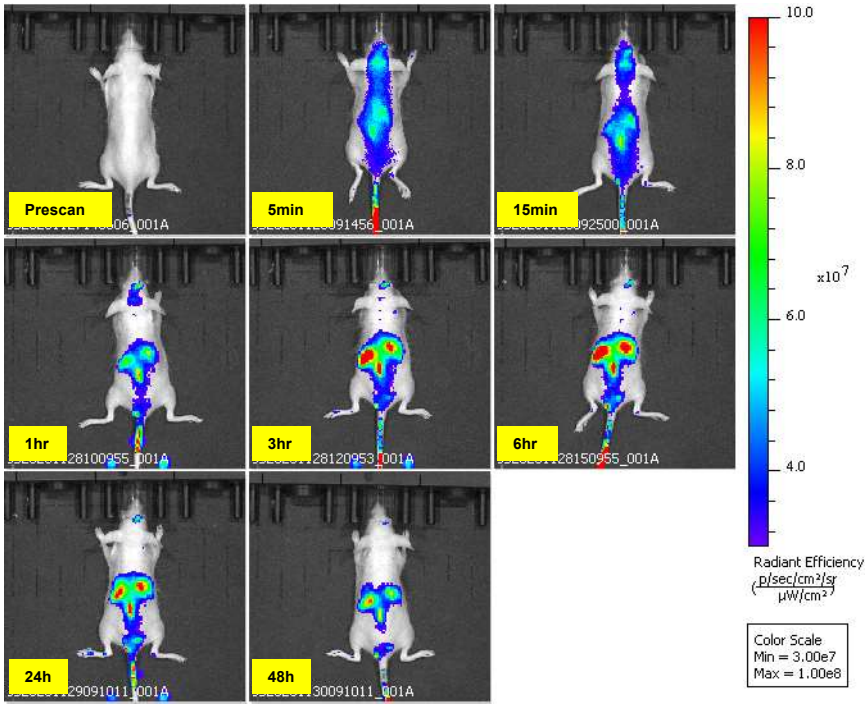
Ventral



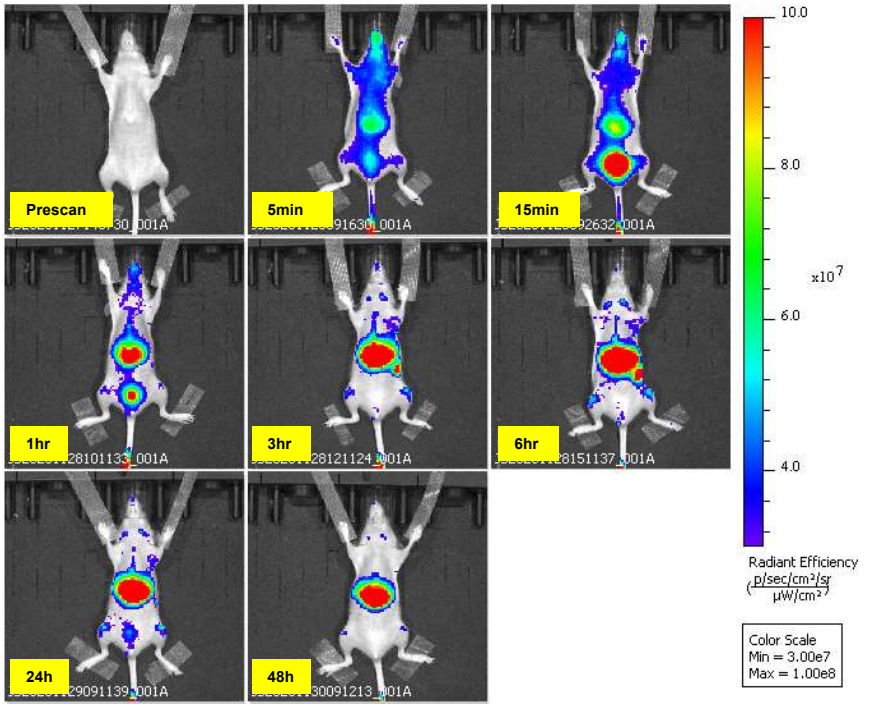
- Higher level of signals were observed in the kidney and liver starting at 5 minutes.
- High signal in liver persisted for up to 48hrs
- Signals were observed in bladder starting at 5 minutes

In vivo Imaging IV (tail vein) inj. (Group of 3): Phospholipids/2S-P3-Sia 3:1 M3

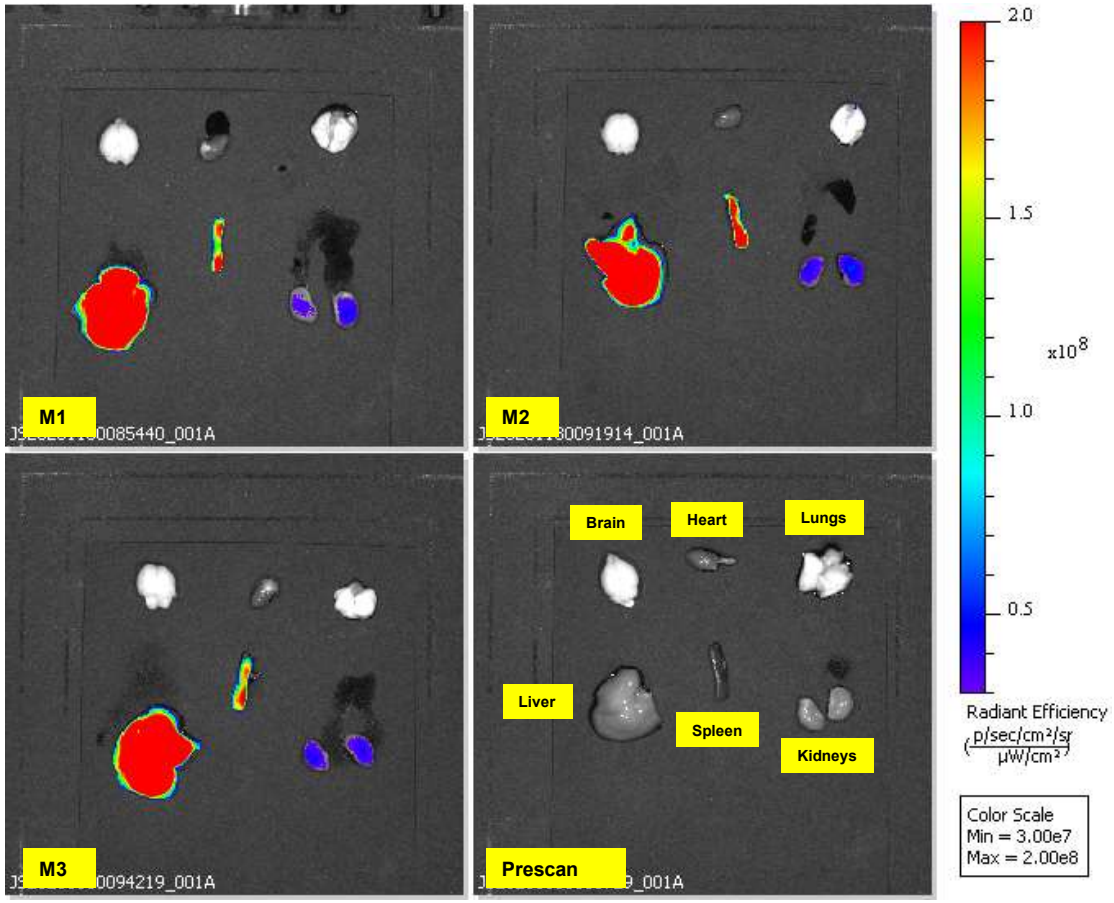
Dorsal



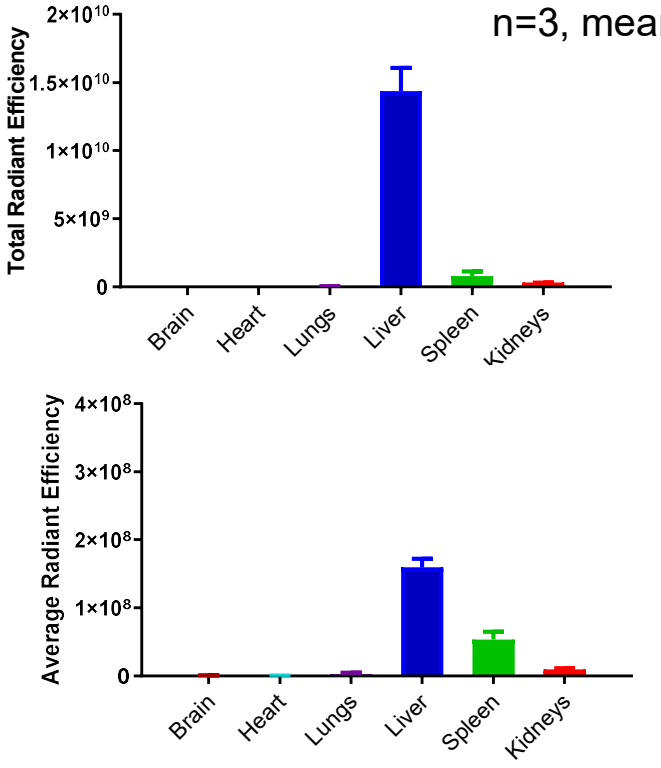
Ventral



Ex Vivo Imaging IV (tail vein) inj. of Phospholipids/2S-P3-Sia 3:1



n=3, mean ± SD



- Highest signals observed in the liver.
- Lower signals in lung, kidney and spleen.