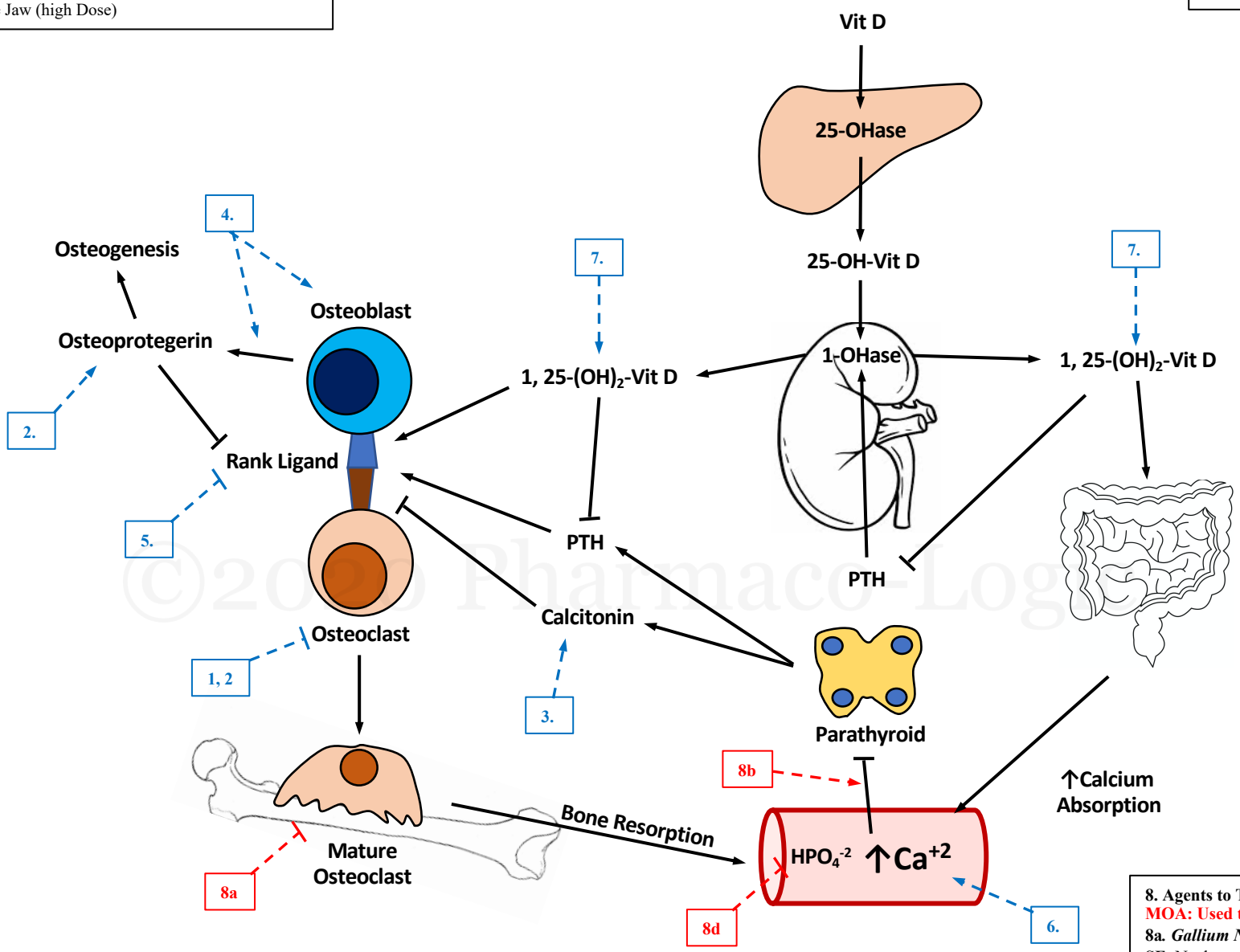
1. Bisphosphonates
MOA: Binds to hydroxyapatite in bone → Inhibits Osteoclasts
Alendronate, Risendronate, Ibandronate, Zolendronate
USE: Osteoporosis, Hypercalcemia, Paget's disease, osteogenesis imperfecta
SE: Esophagitis, (Drink water, remain upright for 30 mins) Osteonecrosis of the Jaw (high Dose)

2. Selective Estrogen Receptor Modulators (SERMS)
MOA: Antagonist at the Breast, Agonist at the Bone
Raloxifene, Tamoxifen
USE: Osteoporosis, ER+ Breast Cancer
SE: Hot flushes, ↑ risk of DVT and endometrial CA

3. Calcitonin
MOA: Released from Thyroid C Cells → Inhibits Osteoclasts
USE: Osteoporosis
SE: Abdominal pain, Diarrhea, Vomiting Flushing

4. Teriparatide
MOA: Recombinant PTH analog → Stimulates Osteoblasts
USE: Osteoporosis → causes new bone growth
SE: Increased risk for osteosarcoma, hypercalcemia
CI: Paget's disease



5. Denosumab – Monoclonal antibody
MOA: Inhibits RANK-Ligand → Inhibits Osteoclast maturation (mimics Osteoprotegerin)
USE: Osteoporosis
SE: Increased risk of infection, Osteonecrosis of the jaw, Joint and muscle pains

6. Calcium supplements
MOA: Increase Free Serum Calcium
Calcium gluconate (IV), *Calcium chloride, Calcium carbonate* (Oral)
USE: Osteoporosis, Magnesium Toxicity, Hyperkalemia
SE: Arrhythmia, Nausea, Hypotension

7. Vitamin D Supplements
MOA: Increase Free Serum Calcium
Calcitriol, Doxercalciferol, Paricalcitol
USE: Osteoporosis
SE: Arrhythmia, Nausea, Hypotension

8. Agents to Treat Hypercalcemia/Hyperphosphatemia
MOA: Used to Decrease Free Serum Calcium/phosphate
8a. *Gallium Nitrate* – MOA: Inhibits bone resorption
SE: Nephrotoxicity
8b. *Cinacalcet* – MOA: Parathyroid calcium agonist → ↓PTH release
8c. *Glucocorticosteroids* – MOA: ↓Calcitriol production
8d. *Sevelamer* – MOA: Phosphate binding gel, reduce gut absoption
***Lanthanum carbonate* – MOA**: Phosphate binding gel