A mathematical model of the mevalonate cholesterol biosynthesis pathway

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Highlights

- A mathematical model of the mevalonate pathway is presented and analysed.
- Enzymatic rate limiting steps are important in controlling cholesterol levels.
- Negative feedbacks within the pathway ensure cholesterol levels are tightly bound.
- The SREBP-2 cholesterol feedback allows for oscillatory or monotonic solutions.
- A CYP51 inhibitor is shown to have negligible effects on farnesyl-PP levels.