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Cheater-altruist synergy in public goods games

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Highlights

- Six models of cancer growth with a public goods game under immune system suppression are explored.
- We show how cheaters are beneficial to the population as a whole.
- Under a linear benefit function, the cancer cells face a threshold Volunteer's Dilemma whereby a threshold of cooperation is required to escape immune system suppression.
- Under the nonlinear Monod function, optimal growth of the tumor occurs for a mixture of altruists and cheaters.

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