In this paper, the energetic and exergetic assessment for triple effect absorption cooling process integrated with waste energy is given to investigate the system performance. Against the vapor compression-based cooling systems, the triple effect absorption cooling process demonstrates an effective solution from the approaches of smart solution and ecological protection. The most important role of absorption cooling process is the utilization of the low-grade or waste energy to generate cooling effect. Nowadays, the single and double effect-based absorption cooling processes are frequently obtainable, although the triple and also quadruple effect-based cooling processes have been examined for effectively system design. The energy and exergy efficiency of triple effect absorption process have computed as 62.37% and 59.03%, respectively. Keywords: Energy, Exergy, Absorption cooling, waste energy, thermodynamic analysis