ELN: Research Assistant

The BioPACIFIC MIP Research Assistant is a retrieval-augmented generative (RAG) large language model (LLM). It is currently trained on over 10,000 research papers in the domain of materials science (polymer-focus); 8,000 papers in the domain of chemistry; and 4,000 papers in the domain of synthetic biology. Only approved BioPACIFIC MIP users can access the research assistant through the ELN.

The research assistant can be found in the bottom-right corner of any given ELN page. When expanded (Fig 1), users can submit their query to the assistant. Upon receiving a response, users can submit a star rating, from 1-5 (5 being the best), evaluating the response (Fig 2). The assistant will also return the top three papers, with titles, abstracts, and DOI links, relevant in formulating its response. User evaluations and assistant responses are stored in the BioPACIFIC MIP LIMS and are used to refine the assistant.

Fig 1. Expanded Research Assistant window. Users write their queries in the text field and click "Submit". Once the query is processed, the assistant's response is populated.

Fig 2. Evaluating Research Assistant responses. Users can rate, on a scale of 1-5, the usefulness/relevance of the response returned by the assistant. Additionally, users can view the top three relevant paper titles, abstracts, and DOIs involved in generating the assistant's response.