

TimelineXtract

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Introduction

- TimelineXtract is an application that speeds up and simplifies the process of participating in a clinical trial by extracting the relevant questionnaires and timeline events from a clinical trial protocol.
- A participant of a clinical trial can upload a PDF of their Clinical Trial Protocol and TimelineXtract will respond with the relevant information.

Methods

- The clinical trial protocols were taken from a large public database of trials maintained by the United States government.
- GPT-4 extracts the information using our carefully engineered prompt. Adobe API then extracts the tables and our system filters for the desired information.
- Timeline Xtract displays the information to the user in a clear and organised way.

Benefits

- Saves time and reduces manual labour of clinical trial participant.
- Reduces chance for participant error, speeding up the trial and ensuring potentially life saving medication can make it to the market sooner.
- TimelineXtract uses secure authentication.

Issues Resolved

- Inaccurate outputs from GPT-4. We solved it by iteratively testing prompts on real clinical trial protocols.
- Difficulty matching text (GPT) with the tables (Adobe). Different formats for the data and different names. We solved it using a vector similarity score to give a “match” score between two entries. We also used preprocessing to normalise text before comparison.
- Generalising each protocol. Every protocol uses different layouts, terminology and formats. We had to add flexibility to the prompts and validation rules to handle all the variation. We also used threshold based matching and fallback rules to handle edge cases.

Extracted Study Overview

Project Title	NIS-PSO-TARGET Non-Interventional Study Protocol
Sponsor	LEO Pharma France
Study Number	2020-A00652-37
Protocol Version and Date	Version: 2.0, Date: 25-05-2020
Study Title	Evaluation of the sensitivity and specificity, compared to DLQI as a standard tool, of a novel QoL questionnaire (treat to the PSOriasis patient satisfactiOn TARGET) among moderate to severe psoriasis patients treated with brodalumab (Kyntheum®)
Phase	Not Available
Therapeutic Area	Psoriasis
Number of Patients	150
Number of Sites	25
Indication	Psoriasis
Duration of Treatment	Not Available
Schedule of Assessments	Table 3, Page 39

Technologies

- TimelineXtract is a Django application running on Render with a react front end running on Vercel.
- Data extracted with GPT4 and Adobe.
- Users, PDFs, Queries, Tables and Outputs are all stored in MongoDB

Sign in with your DCU account to access the TimelineXtract System.

Sign in as Darragh
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Questionnaires

PASI — Psoriasis Area and Severity Index ClinRO

DLQI — Dermatology Life Quality Index PRO

PSO-TARGET QoL — PSO-TARGET Quality of Life Component Grid PRO