Abstract 3PC-024 Table 1: Impact of temperature cycling on SB5 critical quality attributes

<table>
<thead>
<tr>
<th>Category</th>
<th>Test item</th>
<th>Test method</th>
<th>Baseline (%)</th>
<th>Following 3 thermal cycles (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purity/impurities</td>
<td>High molecular weight aggregates</td>
<td>Size exclusion HPLC</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Purity/impurities</td>
<td>Total purity</td>
<td>CE-SDS (non-reducing)</td>
<td>96.8</td>
<td>96.6</td>
</tr>
<tr>
<td>Biological activity</td>
<td>TNFα binding</td>
<td>Competitive binding assay (FRET)</td>
<td>92</td>
<td>98</td>
</tr>
<tr>
<td>Biological activity</td>
<td>TNFα neutralisation</td>
<td>Cell based, NFκB reporter gene assay</td>
<td>94</td>
<td>105</td>
</tr>
</tbody>
</table>

CE-SDS, capillary electrophoresis–sodium dodecyl sulfate; FRET, fluorescence resonance energy transfer; HPLC, high performance liquid chromatography.

Other attributes, including charge variants, oxidation and endotoxin levels remained within acceptable limits. Appearance (including colour, clarity and visible particles), pH, protein concentration and particulates showed no significant changes. None of the syringes had signs of container closure breaches.

In its severe stage, multiple food allergy (MFA) is a pathology with nutritional and pharmacotherapeutic restrictions. Drug intolerance to available medicines and lack of alternatives can lead to magistral formulations.

**Aim and objectives** To compound oral liquid formulations of iron, zinc and sirolimus by eliminating all preservatives, antioxidants, colourings and flavourings, and evaluate their use in a paediatric patient with MFA.

**Material and methods** We made a literature review including physicochemical characteristics of the active principles studied and the compounding magistral formulations described. We also compared the composition between these commercialised drugs and simple syrups.

We accomplished all of the controls described in the pharmacopeia for oral liquid forms on days 1 and 30. Efficacy was evaluated by clinical monitoring from the patient’s birth in 2017.

**Results** According to our bibliographic review, three active principles were formulated with an adjuvant free vehicle: 64% preservative free simple syrup (PFSS).

The final composition was:

- Sirolimus 0.5 mg/mL oral suspension: sirolimus in 1% preservative free carboxymethylcellulose and PFSS. It was compounded using as a pattern the formulation of a tacrolimus suspension, based on molecular similarities.
- Zinc 5 mg/mL oral solution: zinc acetate dihydrate in sterile water 20% and diluted PFSS, based on existing formulations. We used the best tolerated salt.
- Iron 30 mg/mL oral solution: ferrous sulfate heptahydrate in sterile water 20% and diluted PFSS. We chose the salt with the highest absorption and solubility.

Quality controls: the solutions showed clarity and absence of precipitates and the suspension, re-dispersibility and homogeneity after stirring. The organoleptic characteristics were not optimal for the taste. The results for microbiological controls were negative.

Due to the physicochemical and microbiological characteristics, a period of validity of 30 days in refrigerated amber glass was considered.

Zinc and iron deficiency were corrected and blood levels of sirolimus were within the adequate range. Currently the patient continues with treatment and an exhaustive follow-up is being carried out.

**Conclusion and relevance** Our oral liquid formulation was appropriate for the pathology of our patient and contributed to his growth and health. The comprehensive pharmaceutical care and an individualised compounding for the MFA was essential.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**

Conflict of interest Corporate sponsored research or other substantive relationships:

HE is an employee of, and holds stock in Biogen, responsible for the commercialisation of SB5. JK, JY, DJ, SJH and SJP are employees of Samsung Bioepis, the marketing authorisation holder of SB5.

3PC-025

**MAGISTRAL FORMULATION FOR A PATIENT WITH MULTIPLE FOOD ALLERGY**

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**Background and importance** Multiple food allergy (MFA), in its severe stage, is a pathology with nutritional and pharmacotherapeutic restrictions. Drug intolerance to available medicines and lack of alternatives can lead to magistral formulations.

**Aim and objectives** To compound oral liquid formulations of iron, zinc and sirolimus by eliminating all preservatives, antioxidants, colourings and flavourings, and evaluate their use in a paediatric patient with MFA.

**Material and methods** We made a literature review including physicochemical characteristics of the active principles studied and the compounding magistral formulations described. We also compared the composition between these commercialised drugs and simple syrups.

We accomplished all of the controls described in the pharmacopeia for oral liquid forms on days 1 and 30. Efficacy was evaluated by clinical monitoring from the patient’s birth in 2017.

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**Conclusion and relevance** Our oral liquid formulation was appropriate for the pathology of our patient and contributed to his growth and health. The comprehensive pharmaceutical care and an individualised compounding for the MFA was essential.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**

No conflict of interest.

3PC-026

**FORMULATION AND GALenic CHARACTERisation OF A TACrolimus ADhesive gEL FOR TREATMENT OF ULCerative PROCTitis**

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**Background and importance** Ulcerative proctitis is associated with faecal incontinence, pain, itching, bleeding and purulent discharge, and is often managed with topical salicylates or steroids. However, treatment can be refractory in some patients. Rectal administration of tacrolimus may be effective in difficult to treat ulcerative proctitis1. Some patients find it difficult to retain rectal pharmaceutical forms, suppositories or enemas, which lead to painful administration and inadrettification.

**Aim and objectives** To develop a tacrolimus adhesive gel and its galenic validation, to improve and extend contact time of tacrolimus with rectal mucosal surfaces.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**

No conflict of interest.
Material and methods Tacrolimus 0.06% adhesive gel was compounded, in a biological safety cabinet with protection equipment for the manipulator, with tacrolimus 5 mg capsules (Prograf, Astellas Pharma), glycerin (Acofarma) and a lipophilic gel (Excipiente Acofar adhesivo oral, Acofarma). The compounded drug was packed on monodoses of 4.5 g with the aim of administering 2 mg of tacrolimus in 5 mL latex free luer lock syringes (Omnifix, B Braun). Each syringe was supplied with a rectal cannula (José Mestre, SA) for patient administration (1 g of gel is retained in the cannula). Tacrolimus gel was stored at room temperature, in a dry place and protected from light.

Galenic characterisation was carried out, according to good manufacturing practices, testing for homogeneity and appearance, extensibility, pH and monodose mass extraction, weekly over 28 days. Determination of pH was made with pHmeter glp21.

Results For 28 days at room temperature: tacrolimus gel kept the same appearance (granular, translucent and colourless), there were no quite different values for extensibility and pH (5.99) and monodose mass extraction (3.50 g) results differed minimally (<5–10% difference). Currently, one patient is treated in our hospital with this formulation once every 2 days, responding positively, with no adverse effects and good tolerance.

Conclusion and relevance This gel preparation is suitable for 28 days at room temperature, maintaining its galenic characteristics and it can be useful in patients with difficult to treat ulcerative proctitis.

REFERENCES AND/OR ACKNOWLEDGEMENTS


No conflict of interest.

3PC-028 COMPOUNDING AN ORAL LIQUID FORMULATION OF DIAZEPAM ALCOHOL FREE

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Background and importance Drug shortages is a common international problem. Pharmaceutical compounding is a viable alternative, especially relevant in pediatrics. An example of such a situation is the oral liquid formulation of diazepam, indicated for epilepsy and seizures. However, only formulations that use ethanol as a cosolvent are described in the scientific bibliographies. This excipient is not recommended in paediatrics, with children’s age dependent proposed limits by EMA/FDA/WHO.

Aim and objectives To develop an oral liquid formulation of diazepam that is ethanol free.

Material and methods A compounding vehicle, B9, National Compounding Formulary, formulated with the suspending agent Avicel RCS81 polymer was used to prepare an oral suspension of diazepam 0.4 mg/mL. Tablets and bulk material were used as drug sources. The stability of the drug was verified over 90 days under different temperature and storage conditions (ambient and refrigerated) with the inhouse high performance liquid chromatography (HPLC) method using the UltiMate 3000 HPLC (Thermo Fisher Scientific, USA). Particle size was measured using the Mastersizer 300 (Malvern Panalytical, UK).

Results After 7 days, more than 10% of drug loss was observed for the ambient storage preparations, both tablets and bulk, and for the refrigerated bulk preparation. The tablet refrigerated formulation maintained >90% of the drug content until the 60 day mark. No significative changes were