curve, but also the content and yield of milk fat depending on the order of lactation according to the age of the cows, that is, the ontogenetic parabola of milk fat production.

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PHARMACOLOGICAL PROPERTIES OF 3,5,4′-TRIHYDROXY-TRANS-STILBENE – A PROSPECTIVE PLANT ANTIOXIDANT

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Polyphenols are biologically active compounds that have many beneficial effects on human and animal health due to various properties, such as antioxidant, anti-inflammatory, immunomodulatory and others (Zeng et al., 2020; Zhou et al., 2021b; Naumenko et al., 2023). One of the most studied natural nonflavonoid polyphenols from the stilbene group is 3,5,4′-trihydroxy-trans-stilbene (resveratrol) (Perrone et al., 2017; Zhou et al., 2021a). Resveratrol is a phenolic substance with pronounced antioxidant properties that was first isolated from *Veratrum grandiflorum*, from where the name was derived, and is found in more than 70 plant species, but has a high concentration in the skin of red grapes, as well as wine, peanuts, soybeans and some berries, has attracted the attention of scientists in recent decades (Meng et al., 2020; Shaito et al., 2020; Toniolo et al., 2023).

Resveratrol is known for its antioxidant properties due to the neutralization of reactive oxygen species (ROS), including hydroxyl, superoxide, and metal-induced radicals (Li et al., 2018a,b; Koshevoy et al., 2022). In addition, resveratrol is widely known for its positive effects on aging processes and its use in the complex therapy of some types of cancer (Varoni et al., 2016; Ko et al., 2017). Mechanisms of action under different pathological conditions have certain similarities, however, different changes of markers in blood and cell cultures of different species of animals were detected. For example, in mice, resveratrol delayed age-related changes, mimicking certain effects of dietary therapy, although no increase in lifespan was observed. At the same time, it was established that the antiaging and anticancer effects of resveratrol were associated with an increase in the level of NAD-dependent deacetylase (Hubbard & Sinclair, 2014; Li et al., 2018a; Koshevoy et al., 2024).

Some authors argue about the low severity of various effects when resveratrol is administered, which explains the need for its long-term use. However, no adverse effects were observed when resveratrol was administered orally to rats (200 mg/kg/day) and dogs (600 mg/kg/day) for 90 days (Johnson et al., 2011). Despite the high absorption of resveratrol, studies in mice, rats, and rabbits have shown that resveratrol breaks down relatively quickly in the blood, thereby reducing its bioavailability – in rabbits, for example, the half-life in blood plasma is only 14 minutes (Smoliga & Blanchard, 2014; Gambini et al., 2015; Park & Pezzuto, 2015). Despite the therapeutic effect of resveratrol, its use is limited due to poor solubility and low bioavailability. Recent research has focused on developing new formulations of resveratrol to overcome its low solubility (Hou et al., 2019).

The existing pharmaceutical preparations of resveratrol have a high rate of metabolism, and therefore the wide application *in vivo* is limited by low solubility and bioavailability, which need to be adjusted (Zupančič et al., 2015; Zhang et al., 2021). Note that after oral administration of 25 mg of resveratrol, only trace amounts (<5.0 ng/ml) of its non-metabolized form can be detected in blood plasma. It has also been determined that after administration, more than 70% of resveratrol is absorbed through the gastrointestinal tract, where it is later metabolized by three different pathways. The extremely rapid sulfate conjugation of resveratrol in the gut/liver is a limiting factor in its bioavailability (Zhang et al., 2021).

Resveratrol exhibits low solubility in water (<0.05 mg/ml), which affects its absorption depending on pH and temperature. In this context, Zupančič et al. (2015) found that the solubility of resveratrol at pH 1.2 is 64 µg/mL, while at pH 6.8 and pH 7.4 it becomes 61 and 50 µg/mL, respectively. The same authors also reported that after dissolution in water, resveratrol is stable at room temperature or body temperature only under acidic conditions, but with increasing pH, stilbene degrades exponentially. Thus, it was found that resveratrol is most stable in liquid form at low pH and temperature, as well as limited exposure to oxygen and light (Zupančič et al., 2015).

After oral administration, resveratrol undergoes passive diffusion or can form complexes with transporters such as albumin and lipoproteins (Chen et al., 2007). It is stable in the acidic environment of the stomach, but can be hydrolysed to oligomeric phenols and/or undergo isomeric conversion. In addition, glycosylation of resveratrol by resident gut bacteria can lead to the formation of a stilbenoid glucoside that can be absorbed in the gut (Wang & Sang, 2018).

So, from these literary sources it is clear that resveratrol is an actual object of research, especially in the field of pharmacology and redox biology. This compound exhibits antioxidant, anticancer, anti-inflammatory properties and has a positive effect on the immune system, etc. However, the bioavailability of resveratrol and its pharmacodynamics in the body of animals and humans showed low indicators and require the development of ways to solve this problem.

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ОСОБЛИВОСТІ ВИКОРИСТАННЯ КУЛЬТУР КЛІТИН *IN VITRO* У ВЕТЕРИНАРНІЙ ВІРУСОЛОГІЇ

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Виявлення вірусу в природних і клінічних зразках є складною проблемою досліджень і діагностики. Існують різні підходи до виділення та ідентифікації вірусу. Культури клітин або тканин (обидва терміни взаємозамінні) являють собою складну систему, за допомогою якого еукаріотичні клітини підтримуються *in vitro* поза їх природним середовищем. Вони мають широке застосування, охоплюючи не тільки наукову, а й діагностичну сферу. Культури клітин також використовуються як «середовище культивування» у вірусології де вони себе добре зарекомендували як доступні моделі за використання в дослідній роботі. Розвиток сучасних методів культивування клітин має вирішальне значення для експериментальної та діагностичної вірусології, адже жодна сучасна біопромисловість не може обійтися без напрямку культивування клітин *in vitro*. Так як у ряді країн широко використовують постійні лінії клітин для виготовлення ветеринарних біопрепаратів, а саме специфічних, лікувально-профілактичних та діагностичних вірусних препаратів. На сьогодні більшість провідних установ науково-біологічного спрямування посилено розвивають дослідження у напрямку культивування рослинних культур клітин та комах. Культури клітин застосовуються у