SPECIAL EDITING SAMPLE LETTER

Date

Dear Authors,

I enjoyed working on your document. In this letter, you will find some general document-related feedback as well as specific comments and notes.

Overall impressions

- The manuscript is not yet in the finalization stage. Given the extent of changes required, I recommend that you return for another round of editing before submission. Before this, please review all my changes carefully and make the necessary revisions.
- Throughout the document, the main language enhancements required were to ensure accuracy of tense and proper transition between sentences.
- Reference citations must be provided in the text for all material sourced from studies other than the present one. This includes the authors' own previous studies as well.

Specific comments

- I have combined the results and discussion sections into one, as this seemed necessary to improve the flow.
- Figures and tables must be cited in the text in numerical order.
- At certain instances, I have deleted repetitive text or recommended that you do so, in order to make the manuscript more concise.
- Academic writing should be as specific as possible. At several points in the manuscript, you are missing this specificity. For instance, for how long were the fish anesthetized?
- Nouns followed by numbers or letters (like *day 1* and *group D*) are not preceded by "the" since their specificity is already implied by the number/letter.

I hope you find this insight useful for future work, and I look forward to seeing your manuscript published. All the best!

Editor

Sirius Interactive
language solutions for researchers

SPECIAL EDITING SAMPLE

Journal Article

Introduction

~~In order to detect the electrocardiogram (ECG) from the fish under unrestrained condition, several~~Several telemetry techniques ~~such as~~ using radio or ultrasound acoustic transmitters have been ~~attempted.~~ developed to record electrocardiograms (ECGs) of fish under unrestrained conditions. In general, fish ECG~~, especially from the unrestrained fish has~~ s have been ~~recorded~~ used to ~~evaluate~~ estimate the metabolic rate~~. Though the method using telemetry~~ of fish, especially unrestrained fish. Although these techniques can ~~detect ECG continuously~~record continuous ECGs under natural conditions, some problems remain~~ed~~ in ~~using the technique. The transmitted~~ their use. For example, the acoustic pulses transmitted in the telemetry system ~~were~~are triggered by QRS ~~wave~~ waves on the ECG. ~~It~~Therefore, it is very important to ~~set~~adjust the ~~adjusted~~ sensitivity of the transmitter when the fish ~~was~~are released to ensure that ~~sufficient~~ the amplitude of QRS coincides with ~~can be reached at~~ the trigger level. ~~The~~ This method is ~~also laborious~~inconvenient in pursuing the subject except ~~in~~ for the case ~~when several~~of fixed stations ~~were~~ set in closed waters. ~~Recently, a~~ A new ~~miniaturized~~micro data~~-~~logger has recently been developed to record the electric potential ~~with high~~of free-ranging aquatic animals. The logger has a large memory ~~capacity~~ and ~~capable of supporting~~can support frequent sampling~~has been developed to~~. It can also record the ~~ECG from free-ranging aquatic animals. This data logger can record~~ instantaneous bioelectric potential and store ~~them~~ the data for a given period~~depending on the sampling rate~~, allowing all the ECG wave data to be stored and ~~memory capacity, respectively. This allows the whole ECG wave to appear after recovery and downloading.~~ downloaded. However, ~~the miniaturized data logger has no means to confirm~~we cannot confirm whether the ECG was ~~recording or not~~ recorded between the release and retrieval periods~~. Thus it~~ using the logger. It is therefore necessary to record clear waves ~~of cardiac potential~~ without electric noise arising from the bioelectric potential of the heart even when the fish is ~~moving.~~ in motion.

[Two long paragraphs detailing previous research omitted]

In this study, we attempted to estimate the changes ~~of fish~~ in the physiological ~~condition by means of power spectral analysis of heart rate variability~~conditions of fish in a net pen using ~~a micro~~ECG data

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recorded with a micro data-logger ~~carried on~~ attached to the dorsal ~~portion~~side of the fish. ~~The red sea bream (Pagrus major) was used as the subject species carrying the micro data logger to record ECG for certain duration and to assess fish physiological condition in the net pen.~~ We examined the power spectrum analysis of the heart rate (HR, bpm) of red sea bream *Pagrus major*. Since ~~the~~ spectral analysis ~~especially for the FFT methods~~ requires ~~certain number~~large amounts of data ~~sets, we tried to record the~~, successive ECG ~~from~~ recordings of free-swimming fish ~~as long as possible. Successive ECG recording extending to almost~~were carried out for about 10 days ~~was obtained, thus~~, enabling us to calculate power ~~spectrum of heart rate variability using any duration~~ spectra of HR ~~data sets~~ changes at any time and for any duration~~at a given time~~. The retrieval of the fish from the net pen was easier compared to other studies where it is difficult to recapture fish carrying the logger after releasing them into the open sea.

Materials and methods

~~**Attachment of electrodes**~~

~~The experimental animals used were 6~~**Experiment**

Six red sea bream (~~averaging~~avg. 3561 g ~~in~~ body ~~mass~~weight; 54.8 cm ~~in~~ folk length) were reared in a net pen (8~~×~~ × 8~~×~~ × 8 m)~~,~~ and retrieved just before the experiments.~~–~~ The experiments were performed during August ~~to~~ and September 2003 in ~~the~~ a set of net pens ~~(~~ (8~~×~~ × 8~~×~~ × 8 m and 5~~×~~ × 5~~×~~ × 3 m) ~~set in the sea~~ near the ~~marine biological center~~Marine Biological Center of XXX~~, Water~~. The water temperature was measured every 5 ~~second~~s during the experimental period ~~giving an~~ (average ~~of~~ 23.1 ˚C ~~(~~; day-time, 23.4 °C ~~and;~~ night-time, 22.9 °C).~~–~~ The fish were fed ~~with~~ a pelletized food diet ~~of pellets~~, and ~~, but discontinued 72 h prior to any manipulation of animals.~~ feeding was suspended 72 h before the experiment to avoid any side effects.

~~To record cardiac activity of the~~ For recording the ECGs, two stainless steel wire electrodes were implanted subcutaneously. The fish ~~they~~ were ~~first~~ anaesthetized ~~in~~ with phenoxyethanol solution (~~1ml/l) and then two stainless steel wire electrodes were implanted subcutaneously.~~1 ml^{-1}) before the surgery. [Detailed description of method omitted. References were given for the method~~.~~.]

Data analysis

~~The records of heart activity~~ HR data were downloaded from the loggers to a computer and ~~initially~~ analyzed using the ABC program (DEF Inc., CA, USA). ~~Using the successive time series of bioelectric potential,~~ The beat–to–beat intervals ~~detected~~ were measured when the bioelectric potential exceeded a certain trigger level ~~were measured as time domain. Instantaneous HRs~~. The instantaneous HR (bpm) ~~were~~ was also calculated. ~~As~~Since the time ~~series of instantaneous HR did~~ sequence was not ~~occur at~~ regular ~~rates but~~, it was measured in ~~variable intervals, they were~~

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~~measured by means of~~ heart beat counts. ~~Frequencies of heart rate~~The frequency of HR variability ~~are~~ is thus expressed in cycle~~/beats.~~ s/beat. An approximate~~d~~ conversion into ~~units equivalent to~~ ~~Hz~~ hertz~~is~~ can be obtained by dividing the frequency ~~values~~ in cycles/beat~~s~~ ~~by~~ with the mean interbeat duration. [Remainder of paragraph omitted. No statistical tests were done.]

Results & Discussion

~~Distinctive~~ **and** ~~successive traces of ECG were obtained from 2 test fish after retrieving the attached data logger. Longer~~**Discussion**

Clear and distinct ECG traces were continuously recorded by the data logger for 230 h after releasing the fish into the pen. [Text omitted]

Distinct and successive ECG traces were recorded for two test fish after retrieval of the data-loggers (Fish A and B). ECG records of longer duration ~~of ECG record reaching,~~ up to 9 days and 14 h ~~was,~~ were obtained ~~when the~~ with a sampling interval ~~was set at~~ of 14 ms. ~~Though~~ (Fig. 2). Although the peaks of the QRS complex ~~on the ECG trace looked~~point downward, unlike common ECG recordings ~~as shown in Fig.2, downward peak trace of QRS may invert~~, the trace inverted upward ~~if~~when the connections of the lead ~~wire from 2~~ wires to the two electrodes were reversed ~~as connected to the logger. As shown in Fig.2, almost every QRS complex~~ . Most of the QRS complexes appeared ~~like~~ as spikes and ~~was distinctive~~were distinct throughout the ~~whole~~ observation period. ~~–~~ Thus ~~each interbeat of~~, the interbeats between QRS complexes ~~was~~ were measured by setting a certain trigger level on the ECG trace, and were also determined by visual inspection of the trace when ~~QRS~~the complexes were buried in the disturbance of the base line or electric noise. ~~Fig.~~Figure 3 shows one record of ~~400~~400 000 successive heart rates for 9 days and 14 h for ~~1 fish. This~~Fish A. The fish was released into the net pen just after attaching ~~a~~the logger at 15.30 ~~hours~~ on 2 Sep. 2003 and retrieved at 10.00 ~~hours~~ on 13 Sep. 2003. ~~The other~~Other successive ~~record traced the ECG~~traces were recorded for ~~almost~~about 4 days. ~~–~~

[The rest of the results, which have been omitted, detail data ~~obtained from 1 fish~~of Fish A.]

~~**Discussion**~~As shown in Figs. 3 and 4, the HR decreased from 35 to 25 bpm in the first 12 h after release. However, a clear trend of recovery following surgery and release was not noted, even though stabilizing the HR is often used as an index of recovery or acclimation from a surgery. When the test fish were released in natural conditions or into the net pen, the HR decreased and stabilized in 1 or 2 days, while the time to reach resting levels was several days to 1 week when the fish were kept in a closed tank.

~~Clear and distinct ECG traces were continuously recorded by the data logger for 230 h after releasing because retrieval of the fish from the net pen was easier in case of the present study, while~~

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~~it may be very difficult to recapture the fish carrying the logger after releasing into the open sea. On the other hand, the micro data logger for bioelectric potential was applied similarly to record the ECG of other animals, for example, birds (W et al., 1995; B et al., 1997; E et al., 2001), penguins (K et al., 1999; G et al., 2001; G et al., 2003; F et al., 2004) and sea lions (M et al., 2003), of which logger were recovered with high probability after releasing. In those studies, HR change was usually used to estimate metabolic rate when animals encountered various condition or events.~~

[Text omitted]

~~As shown in Fig.3 and Fig.4, the initial changes of HR from releasing decreased from 35 to 25 bpm for~~ From the viewpoint of using heart beat variability to estimate the ~~first 12 h. However, clear trend~~physiological conditions of ~~recovery process in HR following surgery and releasing was not noted, even though the stabilizing of HR sometimes has been used as the index of recovery or acclimation from the surgical operation. When the test~~ fish ~~were released in the natural condition or net pen, the initial HR decreased to reach a stabilized level in a day or two, whereas the time course to reach resting levels tended to require several days or even 1 week if the fish were kept in the closed tank.~~

~~[Text omitted]~~

~~From the viewpoint of using heart beat variability for estimating fish condition~~, it was ~~taken in the current experiment~~assumed that the test fish ~~has~~had already recovered on the day following release (day 2) because we observed 1/f fluctuations ~~were already observed~~ (Fig. 7) and ~~there were some~~ high-frequency components ~~of~~ in the power ~~spectral~~spectrum density (Fig. 8) on that day.

[Text omitted]

~~In the power spectra of HR variability for continuous 4 days shown in Fig.6, c~~Circadian periodicity (around 24 h period) was not detected in the power spectra of HR variability for 4 continuous days (Fig. 6), while 10–11 h and 15–16 h periods were dominant ~~in the spectra~~ until ~~the~~ day 7. Since ~~the period of~~ day-time and ~~night time during experiment were 12h~~ nighttime lasted for 12 h 50 min and 11 h 10 min, respectively, during the experimental period, one of the dominant components of the 10–11 h period ~~almost~~ corresponded ~~to~~ with the night-time duration. Water temperature recordings varied widely ~~with as~~ in a distinct pattern that could be associated with ~~the period of day~~daytime and ~~night time. Water~~ nighttime. The water temperature fluctuations ~~might~~ may have been affected by the water current ~~in~~flowing into the experimental area. The average duration between high and low tide~~s~~ and vice versa during the ~~experiment~~ experimental period was approximately 6 h ~~leading to the suggestion~~, suggesting that the minor peak at around 0.0001 cycle/beats (~~around~~ ~5 h 30 min period) reflects the tidal period. On the other hand, D and P

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(1993) found that the ultradian rhythm period of rainbow trout ~~at around~~ was about 1.5 h, ~~which was~~ equivalent to 0.00037 cycle~~/beats in the present study.~~s/beat. This result is derived from the calculation up to the 8 h period, and the observed rhythm may not be a consequence of periodic stimulation but be generated within the organism.~~–~~ According to the present study, it appears that there were lower ultradian periodicities at around 5 h 30 min and 10~~–~~–13 h in the spectrum of red sea bream reared in the net pen, ~~while they were lost in the spectrum of day~~which disappeared on days 6~~–~~–9.~~–~~ The physiological ~~condition~~conditions of the test fish ~~in day~~ on days 6~~–~~–9 ~~might~~may have changed from the ~~former~~first few days.

[Text in paragraph prior to this sentence omitted.] If ~~the~~ red sea bream with loggers attached ~~logger~~ had not taken food for ~~almost~~ 7 or 8 days following surgery, it is also likely that some physiological ~~changes~~ change occurred due to starvation.~~–~~

~~Our results may permit~~ This study enables the assessment ~~about the~~ of changes ~~and~~in the ~~time course of~~ physiological ~~condition~~conditions of fish ~~carrying data logger sutured on their body. Some changes have definitely occurred on the fish, which was supported~~over time. Our results showed that some changes did occur, as demonstrated by ~~existence of~~ 1/f fluctuations or frequency components of the HR variability~~,~~ and visible injury ~~on~~after release to the side where the ~~portion of attachment of~~ logger was attached. The use of micro data-loggers ~~that progressed as~~ opens new avenues for research such as gathering and monitoring the ~~days passed after releasing. Use of micro data logger offers great promises to open up various areas of research such as gathering and monitoring~~ behavioral or physiological information ~~from~~ of free-ranging animals.~~–~~ Further study on the ~~affect~~ effect of attaching loggers and the physiological load on the animals including the associated process of physiological change ~~are anticipated and in order~~should be carried out.